ADVENTURES OF FUTURE SCIENCE

July

HUGO GERNSBACK
Editor

WONDER Stories

In This Issue

"IN THE YEAR 8000"
By Otfrid von Hanstein

"THE TIME CONQUEROR"
By L. A. Eshbach

"CASTAWAYS OF SPACE"
By Arthur G. Stangland

"BROOD OF HELIOS"
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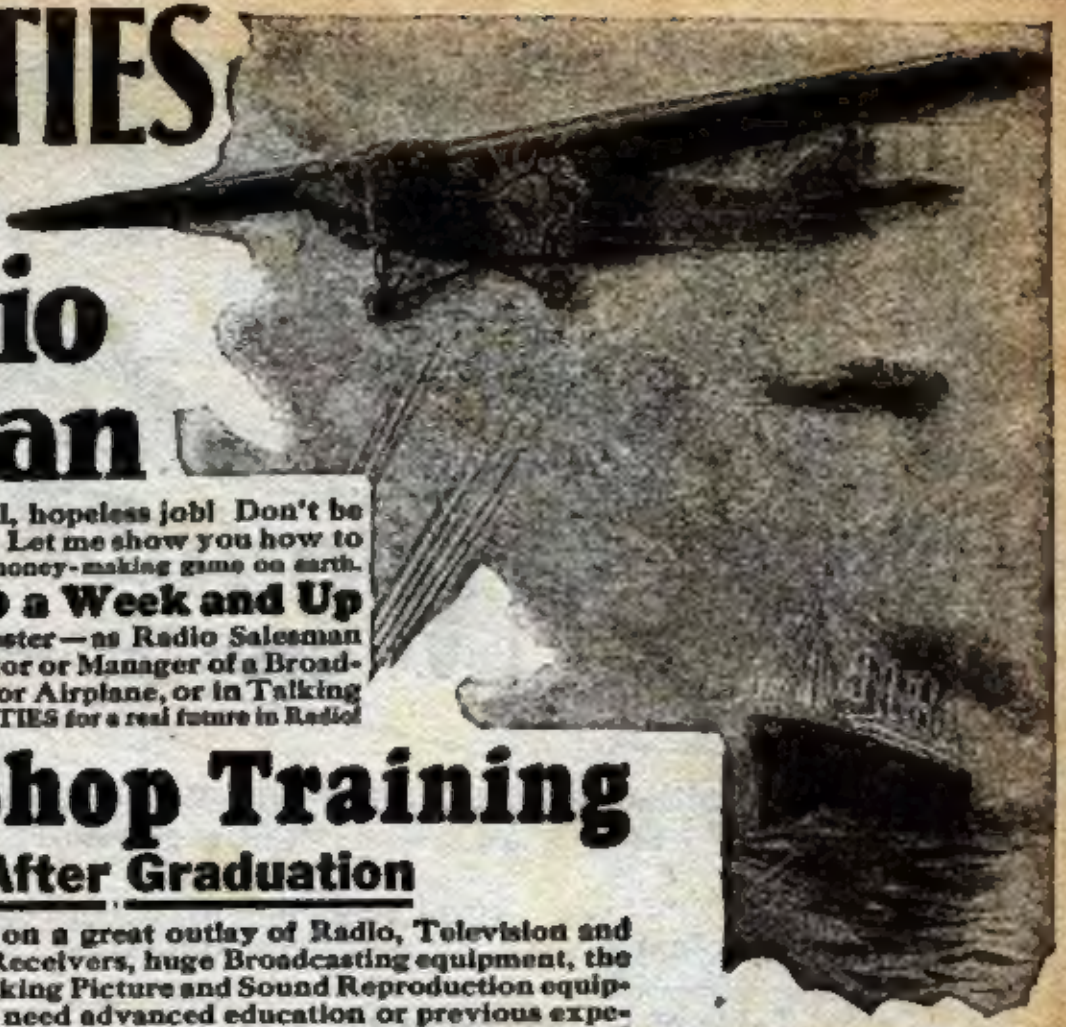

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by Clark Ashton Smith

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AND OTHER STORIES IN THE AUGUST ISSUE

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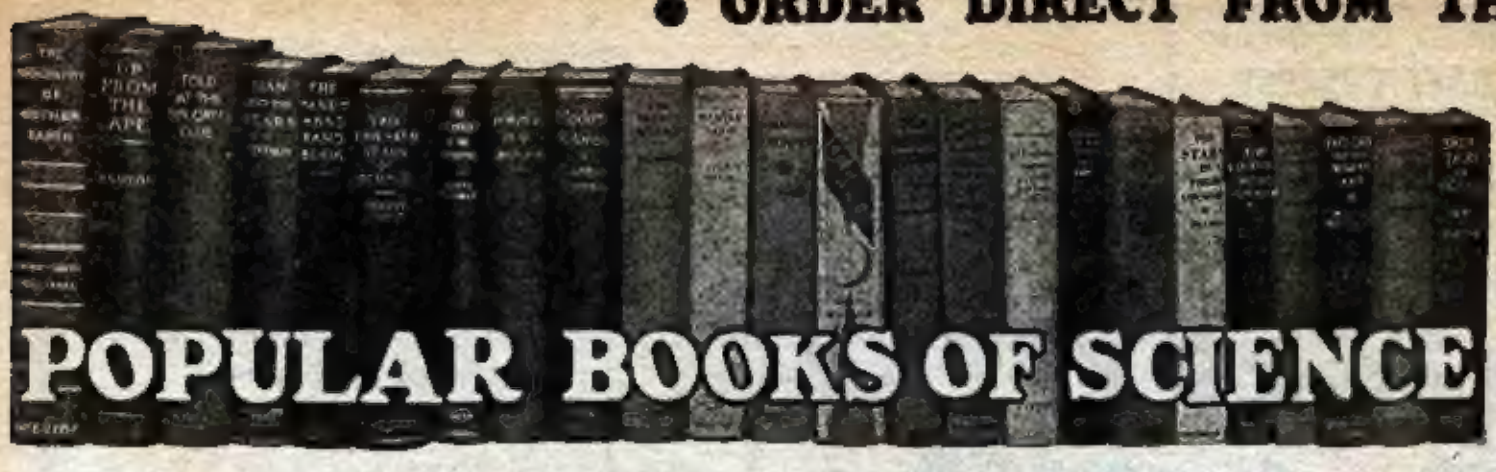

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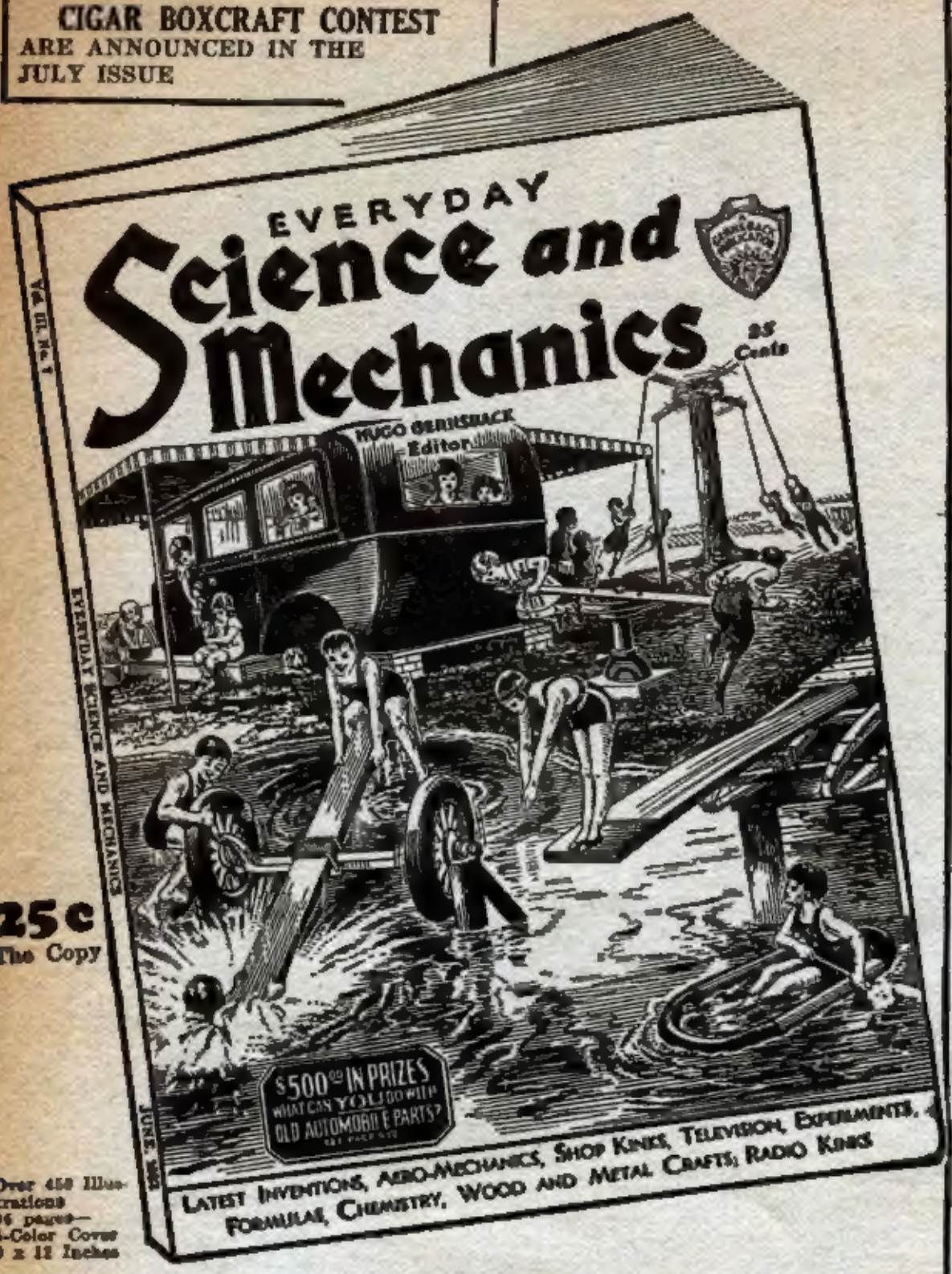
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JULY
1932

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These nationally-known educators pass upon the scientific principles of all stories.

THE WONDERS OF DISTANCE

By HUGO GERNSBACK

TO the human being, born and reared on a small planet, astronomical distances are apt to mean nothing. The greatest distance between two points on the planet itself is only 7930 miles. Even the distances to our next nearest neighbor in space, the Moon—236,000 miles,—and to the Sun 93,000,000 miles are, astronomically speaking, infinitesimal. But, over even such a moderate distance as that of the sun, it takes light eight minutes to bridge the gap. By that is meant that, if at any given instant you look at the sun, you do not see the sun as it is actually at that instant, but you see it as it was eight minutes ago. If the sun should be suddenly extinguished, we would not be the wiser for eight minutes to come.

But these given distances, and those between our own planets, are so infinitesimal that they might well be termed microscopic in comparison, where other distances of space are concerned.

And science is slowly waking up to the fact that these Titanic distances, incomprehensible to our minds, may in time change our entire way of thinking about time. When we come to discuss distances, as those of "island universes," and nebulas, millions of light years away, the problems with which we are confronted and the ideas which we have to assimilate become bewildering.

With our naked eye, we see only the smallest fraction of the visible universe. It amounts to less than the proverbial grain of sand on all of our planet's beaches combined. The telescope opens our vista a little further, but still we do not see very much. And then comes the tantalizing thought that the worlds we see may not even exist, and where space appears empty, it may be ablaze with stars.

To elucidate this statement, let me point out that the greater number of the telescopic stars which you see now may long ago have died. Stars live and die; but while they live they send out their messages of life which speed on through the great void for millions of years. In the meanwhile, the star may die. We know nothing at all of this, and may not know it for hundreds of thousands of years to come; for the starlight of the original star still pours down on us until one day a photographic plate will no longer reveal it. It is gone; it has become a dead world, and can no longer be seen.

On the other hand, ever so often we suddenly see blazing up in a tremendous burst of light, a new star at a point in space where none had been visible before. This so-called *nova* is a world. It may have been caused by a collision of two dead stars, or of two minor stars telescopically invisible because of their distances. The tremendous flareup following the collision makes the new star visible to us. But this statement must be modified, because, by the time we see the new star, it had already died down again.

If the star is a hundred thousand light-years away from us, the event we see of course took place actually one hundred thousand years ago, and in the interval the effects of the collision have subsided and the light power of the star has diminished a great deal. But of all this we actually know nothing because it will take many thousands of years for this process to terminate. Our descendants will witness it in the future. On the other hand, the star may keep its brilliancy and may even increase it for untold ages to come.

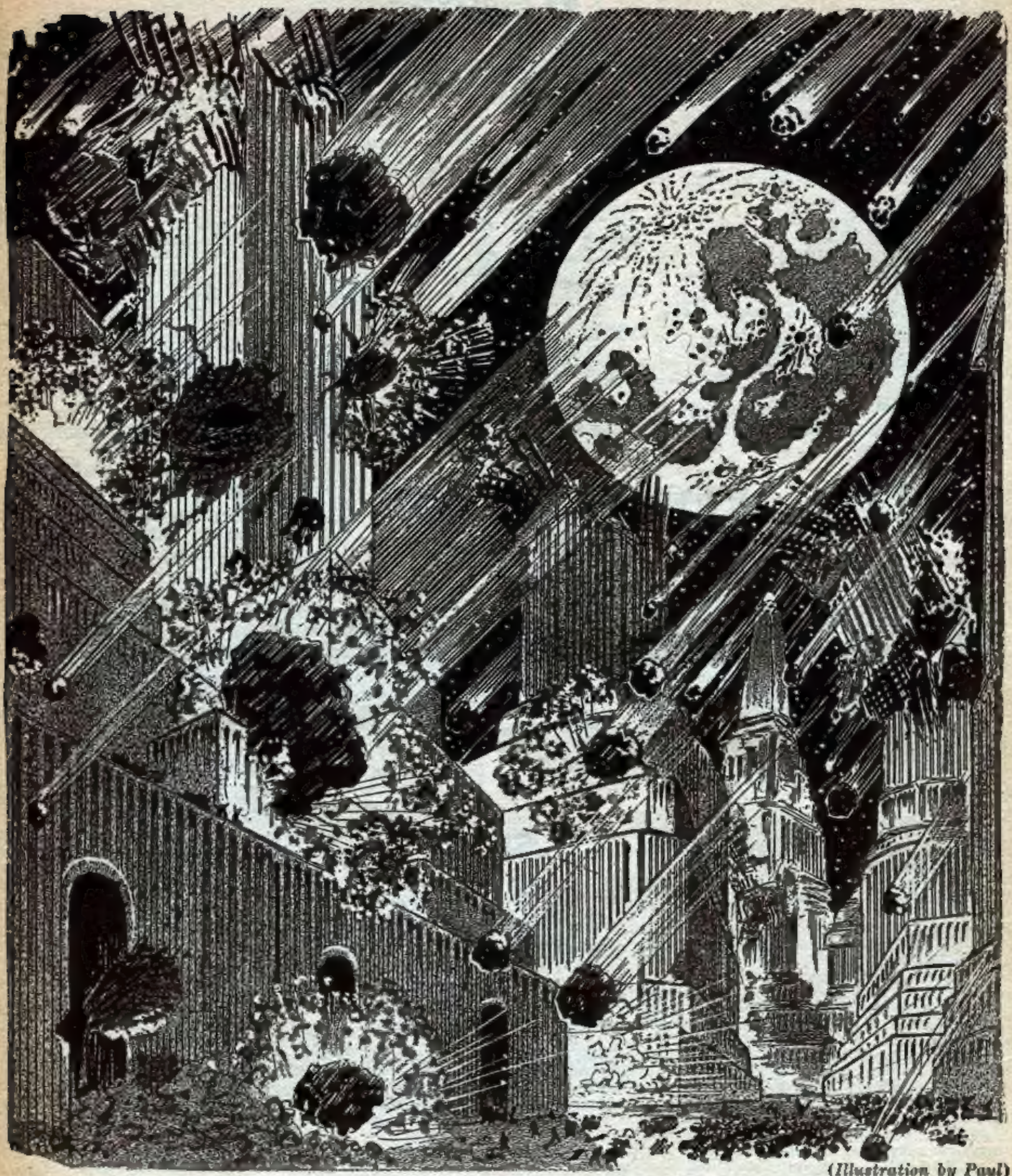
As will be seen, distance is the all important factor in our considerations, and because the distances we are dealing with are so tremendous, we are kept in ignorance of much that is going on in the outside universe.

IN FACT, WE SEE THE OUTSIDE WORLD, NOT AS IT IS NOW BUT AS IT WAS THOUSANDS, HUNDREDS OF THOUSANDS AND MILLIONS OF YEARS AGO. We have not the slightest idea of what the outer universe is like in the year 1932. We know it only largely as it appeared before there was any intelligent being on this planet, and that is not by any means all of the story. Remember, that there is not a single part of the entire universe that is standing still. All stars, all planets, everything moves in various directions, which we only faintly realize today. For that reason, all of the distant stars which we are viewing today, even if they are still alive are, at the present time, in entirely different parts of the sky.

Few stars, if any, could be pointed at with the statement that this or that star is in this or that direction. During the hundreds of thousands of years intervening the stars have, of course, moved to other sections of the sky into positions that we can only suspect today.

IN THE YEAR 8000

By **Otfrid von Hanstein**



(Illustration by Paul)

Another disaster was the destruction of New York city before the turn of the eighteth century. The moon had changed its orbit and was slowly, mercilessly approaching the earth.

IN THE YEAR 8000

Translated from the German by Konrad Schmidt and Laurence Manning

IT was the fourteenth day of Quino in the year 8002.

The world had changed considerably since the day Professor Piccard had for the first time ventured a flight into the stratosphere; since a Zeppelin had navigated the North Pole; since people were first startled by hearing a voice speaking from a great distance over the primitive apparatus called "radio"; and the day when that legendary hero Thomas Alva Edison was at work in his laboratory in America.

Six thousand years had passed since the day when humanity was still divided into countless peoples and states, all of whom spoke different languages and surrounded themselves with Chinese Walls of tariffs and patriotism.

For a long time only three great groups of Terrestrials were known: the Blanco (or whites), who lived in America, Australia and Europe; the Flavo (yellow) who had brought all of Asia under their yoke; and the Nigro (Blacks) to whom all Africa belonged. Although the Blanco thought themselves a superior race and spoke a universal language, evolved from the Esperanto of their ancestors, they still in their Churches and Universities taught the ancient language of their forbears — English, German, French, Russian, and Swedish. In this they resembled the Jews of old who retained their Hebrew tongue through many vicissitudes.

Many changes had taken place on earth during these six thousand years. The difference between the seasons had become less and less pronounced. With ever increasing frequency, huge masses of meteoric matter were breaking through the terrestrial atmosphere from outer space, causing terror and disaster on earth.

One such disaster was the fall of a giant meteor into the Atlantic Ocean. In the year 6047 it had practically destroyed the entire habitable portions of Great Britain and Ireland. Through the loss of all their Asiatic possessions to China, these countries now, however, no longer enjoyed their dominant position in world affairs. Another disaster was the destruction of New York City shortly before the turn of the eightieth century.

The Moon had changed its orbit and was now slowly, but mercilessly, approaching the earth. The month was precisely twenty-eight days in length, and calendar reform had at least been brought about of necessity.

* * *

Grando Blanco was sitting at his desk in his office. The room, in which this slender young man brooded over his blue prints, had a strange appearance. Grando Blanco was head engineer of the great Plejradiumo Works, which for the past thousand years had been operating in the interior of the Moon, supplying humanity with great quantities of the now plentiful radium. "Plejradiumo," as a word, means of course, almost pure radium—a highly concentrated form of this energetic element.

OTFRID VON HANSTEIN

OTFRID VON HANSTEIN'S novel "Utopia Island" created such a stir from our readers that we asked him for another of his prophetic stories of the distant future. The present story was written exclusively for WONDER STORIES.

Many will believe that the people of 6000 years in the future will not be as Von Hanstein pictures them here. Only the future will tell whether he was right. But certainly he sees clearly what the trend of our civilization is and what it must ultimately lead to if it continues indefinitely.

Perhaps some will even think that the emotionless world of the year 8000 will be a happier place, than our own topsy-turvy existence. But without doubt many of the exciting events and stirring pictures of Von Hanstein's stories will come true, and people of the future will marvel at the insight of this 20th century man.

The room was spacious and of circular shape. It was lined with a thick layer of lead, which had been coated with a material to prevent even the smallest particle of oxygen from escaping. In these offices cut into the rocky core of the lunar satellite, all the atmosphere was artificial.

For more than 500 years, since men had come to the Moon in great rocket ships, they had been at work on this huge undertaking, plans for which had been supplied by a certain Thom Alva. A steel building had first been erected and filled with artificial atmosphere brought from Earth. Now, and for a long time past, a complete system of shafts and tunnels honeycombed the entire satellite.

After the fashion of the old metropolitan subways, long tunnels were built close beneath the surface. These tunnels, entered through airlocks, ending on that side of the Moon always turned away from Earth. Here, the first lunar explorers had found huge quantities of frozen gases, including oxygen, hydrogen and carbon dioxide. This veritable "mine" of oxyen had for many years supplied breathable air to the entire system of tunnels in the Moon. The apparatus for this was contained in a natural cavern far in the interior.

There were two observation towers on the actual surface of the Moon. One was on that side always facing the Earth and the other on the opposite side. Communication to them was by means of tunnels. These observa-

tories were also built of steel, with lead lining; and in addition they were heavily insulated to retain the warmth inside.

Grando Blanco sat in his shirt-sleeves, for the room was comfortably warmed by the radium heaters. Through holes in the ceiling, poured down the artificial sunlight which illuminated the office. He raised his head from his work upon the entrance of Edith Vintros. She was a Knabina—a girl of the working class.*

She was of slender build and tall. Her athletic body might almost have been that of a boy. Her hips were small and narrow and her face, framed in bobbed hair, could have been masculine. Her small undeveloped breasts alone suggested her sex.

"Good morning, Sinjoro!"

Grando looked up. "Well, Sinjorina, how is your observatory getting along?"

Edith replied in a deep masculine voice. "Bad weather. I am worried about the freight ships due in today. Again last night there was a heavy fall of meteors back on the Earth. Terrific hurricanes are probably raging down there. If a space ship had been crushed by the falling particles it would not, as you know, be for the first time."

"Nor the last time, either," said Grando. "After all, ocean vessels all through history have been subject to such dangers. Space ships must face them as well. I am worried about something worse.

"You know that the bad blood between Asia and Africa still exists. The final clash between the Nigro and the Flavo, I fear, is not far off. May this struggle be decided as Fate decrees! Never before now has it been so important for the Blanco race to keep in constant communication—scattered over Europe, America and Australia as we are. It is, after all, not probable that cosmic rocks would so endanger space travel as to interfere seriously with schedules. But on Earth, where thousands of stratospheric vessels pass between Europe and America every hour, such a natural disaster would of course destroy thousands of lives and disturb whole fleets."

"YOU are quite right."

"It is therefore imperative to take preventive measures while we may."

Edith laughed. "Do you intend to remove a few billion tons of meteors? Do you? . . ."

"I want to do the only right thing. You know that steps have already been taken to protect the surface inhabitants of Earth from these disasters, which have been increasing in intensity for millenniums. More and more of our cities have been transplanted into the interior of the globe itself. When the surface is finally destroyed, as it must be, our future will lie beneath the ground."

"What is your idea?"

"Look here at my plans. We must endeavor to create a subterranean connection between Australia, America and Europe. Communication down there would then be free from all hazards incident to surface life. It is very simple. A shaft must be driven deep into the earth. Our present insulating technique makes it possible to bore a shaft some 1800 miles deep—down through the crust proper, through the transitional stages, and near the molten interior. This central core has decreased considerably due to cooling in the past six thousand years.

"With such a shaft, half the radius of the earth in depth, driven down from each of the three continents, only comparatively short connecting tunnels would be necessary to complete the project. Down the shafts descend huge elevators and along the tunnels run speedy electric trains—there is your connection! The radium-rocket elevators would ascend the shaft easily in an hour, and another hour would cover the 1200 miles of tunnel. In three hours, a traveler could go from America to Europe—and the entire trip would be free from all possible outside disturbances of whatever nature."

"It is a wonderful idea."

"And quite within our technical abilities today. I intend to make an address upon my return to New York urging that work on it be commenced. That must wait until I get relieved here."

A low, humming noise interrupted their conversation.

"Thank God! There is the space ship."

They both donned light suits made of specially prepared cloth and slipped oxygen helmets over their heads. They stepped through a concealed doorway into a great hall. Down this they walked to where two huge steel doors were to give access to outer space. Grando pushed an electric button and the doors swung open. The hall was instantly emptied of both air and warmth. But the cold of space did not affect the two in their space suits, which were insulated to permit none of their body warmth to escape. They stepped over to one side of the huge entrance and Edith manipulated some levers. These automatically placed the control of the oncoming spaceship's course in the hands of an operator on the Moon. For a moment, Edith and Grando stood there. The sun's rays, not shielded by any atmosphere, shone on the jagged masses of the Lunar plain, making it gleam and glitter. But there was no warmth to be felt, since there was no air. Like a great black sphere—much greater than the Moon appears to us—was the Earth, its night side facing the Moon.

The two stepped inside the great room, keeping close to one wall. Another button closed the great doors as the space ship glided slowly inside and came to a rest. Edith operated a lever. Like water into a canal lock, oxygen flowed into the great vestibule. After observing a few dials on the walls, Grando removed his oxygen helmet. At the same time, the carefully fastened ports of the vessel swung open. The ship was also insulated against loss of warmth, and from it, in ordinary street garb, descended three men and two women. The women resembled Edith in their almost sexless appearance. The thick layer of ice which had been deposited upon the vessel's hull now began to melt.

"Come on back into my office," said Grando. "It is getting uncomfortably damp here."

They were in Grando's office.

"Damn! That was an awful journey! But we were lucky at that, for a great fall of meteors all but struck us just as we were leaving atmosphere."

"What is the news? Our radio has not been working properly since yesterday, on account of the cosmic disturbances."

"War is inevitable between the Flavo and Nigro. Tim-

*This classification was not, however, in any way a social distinction. The greater portion of humanity belonged to the "working class"—regardless of the nature of their labor, which might be mental or physical.

bukto is desperately making defensive preparations against gas attack. The Blanco parliaments at Washington, Berlin and Paris are feverishly at work. You will soon see things for yourself, Sinjoro Grando, for you are expected back in New York tonight."

"Suits me perfectly! I'll turn the mine over to you at once, Sinjoro Vintros."

MR. WILSON (or Sinjoro Wilson as the custom of those days would call him) sat in his office in New York and before him stood Bela Wilson, his sixteen-year-old daughter. She was a very beautiful, delicate girl—still in her adolescence. She seemed entirely different from Edith Vintros, for instance, who was, as has been mentioned, in charge of the observatory on the Moon.

Bela Wilson was small and thoroughly feminine in her soft and rounded contours. Her youth, so far, had been spent at school. This school, however, had little in common with those of former ages. The mornings had been devoted to domestic arts, especially to infant care which her mother taught from experience—for this excellent woman had given birth to no less than twenty-four children. These children were, however, by no means the only ones in their spacious home. Her father, Sinjoro Wilson, had ten wives, each of whom had considerable families. He was a corpulent gentleman with pronouncedly sensual features.

Bela was standing before her father, her pretty head lowered.

"You are sixteen years old today and will have to make a decision about your future. I need not assure you that you are free to make your own choice. You are independent. You must decide for yourself whether you wish to belong to the class of working women or became a professional mother."

Bela nodded sadly and sighed. "Father, I have. I want . . ."

"What do you want?"

"I have read a strange book written by a German."

"Do you mean the foolish prophet, Theodore Werner?"

"Why do you call him foolish? His writings are wonderful!"

"Fairy tales of past centuries which he wants to bring back to life again! Ridiculus in our age!"

"But it must have been beautiful in those days, when a man and woman loved and founded a home and family; when they walked through life, hand in hand, like comrades."

Sinjoro Wilson shrugged his shoulders.

"That may have been possible six thousand years ago, but it is not today. Family! Who would have time for that? You know that most of our young women frown at the mere thought of it. Our men would refuse to waste their precious time in making love. They are absorbed in their work. We have made progress since those days. Family! There is only one family now—the great family of coöperative workers. What if every capable girl were to devote herself to love and perhaps remain away from her tasks for months at a time? Can you imagine Edith Vintros with a child in her arms? Can you picture Grando Blanco rocking a baby to sleep?

"Only since we have learned to imitate the bees and the ants, dividing our women into sexless workers and mothers; only since we have finally banned as ridiculous these fancies of love, marriage and family, have we become lords of the universe. You have had plenty of time to decide this question. If you want to work, your education will be changed starting today. Through sport, exercise and diet your body will be developed on masculine lines, practically sexless. But perhaps you prefer to bear children. That, too, is a beautiful occupation, because it serves the preservation of humanity. If such is the case, I will chose for you a suitable mate, one who is drawing his salary from the state as a professional father. You will then be assigned to that man's house. As soon as you have proved your qualifications you will draw pay from the state yourself as an officially recognized professional mother."

Bela straightened up. "But I want neither one nor the other."

"What do you want?"

"I do not want to relinquish what Theodore Werner has called 'woman's great happiness.' I want to have children and to educate them."

"Well, I myself think you are better qualified for that than for other work."

"But I don't want to give myself to a man whom I do not know—whom I do not love."

"What silly ideas!"

"I want love! I—why wasn't I born six thousand years ago?"

"Love is insanity—a product of foolish minds. That is what comes of reading such books! I will give you other books. You will see that this thing called 'love' has always made humanity unhappy. Do you know how many people committed suicide, under the influence of this now extinct disease? Go and ask your mother! Don't be a fool! I want your answer within a month. Everybody has a duty to subordinate himself to the common good You women are better off than we. Unfortunately, Nature has not been so kind with humans as with the bees—where one female can produce thousands of offspring every year. But even so, you have a choice. We men are selected by compulsion. God knows how much better I should have enjoyed being an engineer or a rocket aviator than a government-employed father, spending my days in pampered luxury to prolong my efficiency as much as possible. Now go to your mother. In four weeks you either commence your training as a worker or —well, you know yourself."

Sadly and with tear-dimmed eyes, Bela left the room. Outside there was much traffic. A rocket car had been compelled to stop, and in it she recognized Grando Blanco. He had just arrived at the Rocketdrome.

"Good day, Grando," she called.

Her cousin turned, saw Bela and nodded. It had never occurred to him that Bela was beautiful. A "Knabina" had always seemed to him nothing more than a female co-worker, whose delicate constitution was suited to certain types of work. He gave her a jovial nod, as one nods to a pretty child. He would have been alarmed and amused had he known that inside Bela's head there flashed a vision of himself as her choice of a mate; that her imagination, stirred by Werner's words, went back six thousand years. She loved him, exactly as a romantic girl in those days would have loved a brilliant and handsome young man.

The car continued its journey and Bela went back into the house. Like all homes of the wealthy, it was deep

beneath the surface of the earth, to avoid the dangers of meteor falls. A century ago, most of the skyscrapers of New York had been crushed under such a catastrophe and 100,000 lives extinguished in a single hour.

This subterranean suburb occupied a large area. It extended beneath what had formerly been the Bronx and was entered by a large tunnel. This, as well as the wide, impressive streets, was in three tiers of traffic lanes, one atop the other. Beautiful lawns and gardens abounded. The entire suburb was illuminated by artificial light, designed to provide all the vital rays of natural sunlight.

The buildings were in rows, and the windows looked out on the three tiers of roadway. In fact, that part of the building opening upon each level was one great window, framed with steel. There were hardly any architectural problems involved in the construction. There were no ornaments. The streets were blasted out of the rock in perfect rectangles. Behind them were the dwellings. Inside the houses, of course, individual taste was free to develop as it would. Circular, semi-circular, octagonal, or triangular rooms with alcoves and stairways of appropriate shape and contour were to be seen.

From the glass walls on the sides of the street, light flowed in all directions. In the interiors, concealed lights flooded the rooms. If one wished, the day could be thirty hours long. If one were sleepy, it was only necessary to push a button. Soundproof walls came down and the light was extinguished. The tired worker rested in perfect quiet.

Outside, the cars speeded silently along the streets. The lawns and plantings grew luxuriously under controlled conditions of artificial sun and rain. Such suburbs were prevalent throughout the civilized world, but most elaborate of all were the New York subterranean quarters of the hospital center and the Motherhood Institute, where the children were brought up in accord with the latest findings of medical science.

Bela, sending a longing glance after Grando, continued into the house. She passed through rooms full of rows of beds, cared for by nurses. She was not at all affected by the thought that all these children were her sisters and brothers. The idea of love had become completely extinct. All that remained was the profession of producing children, necessary if the ranks of the workers were to be kept to full strength. The primal instinct of mother-love was, of course, still in force; for without this, no woman would have undertaken the arduous duties of motherhood.

Bela Wilson took one of the numerous elevators which ran to the surface of the earth. It was an entirely different New York which she saw. The skyscrapers had disappeared. After the catastrophe of the last century, the city had removed the wreckage. The steel had been melted for industrial use. The great melting ovens were still to be seen extending like a black smudge across the lower part of the city from Broadway to Fifth Avenue.

Such remaining houses as were to been on the surface were low and very solidly built. Their flat roofs served for landing airplanes. Factories and office buildings had disappeared. Since transportation had left the sea and betaken itself to the air, New York had lost most of its commercial activities. Yellowstone Park in the former state of Wyoming was now the seat of most of these activities. The Mammoth Caves of Kentucky, also, had been adapted to commercial and educational uses. The only remnant of New York's former commercial glory was the great space ship airdrome. The old City Hall was one of the few remaining buildings. It was used for conventions and public gatherings. A large meeting was now being held there to discuss the outbreak of war between the Yellows and the Blacks.

Bela Wilson steered her machine through the traffic of the surface streets. Her car was speedy and small, a type known for thousands of years and now only used as a sport vehicle. She parked on a side street near City Hall and proceeded on foot. Grando Blanco was addressing the gathering, and a great crowd listened outside the building. He was setting forth his plan to connect the three white continents by means of underground shafts.

"It would be easy to build a tunnel through the ocean. But it would be useless, for meteoric matter falling on the ocean might descend to the depths and shatter it. Only tunnels entered from excavations beneath great mountains offer sufficient safety."

"How long would such an undertaking require?" one enquired.

"By using our entire resources, including the new radium boring-machines, I am confident I could accomplish 180 miles a year. It might be less during the first 800 miles through the solid crust. But deeper down where the rock is half molten, it would only be necessary to push the insulated caisson down and pump out the lava from beneath it. Down there we could make much better speed."

It seemed a rather fantastic project, even in those days. But for that very reason it met with enthusiastic approval.

"A committee must be nominated to discuss the practicability of this plan. In the meantime, may I ask that measures have been taken to stop the war between the Flavo and Nigro?"

Bela Wilson had listened with beating heart to Grando's voice. Why did she take an interest in his plans? What did she know of such things? She saw only the man as he stood there with enthusiastic face, sparkling eyes and strong handsome body. Youngest of the leaders present, yet he was respected by all. The Minister of War succeeded Grando on the platform, and Bela placed herself where he would have to pass near her in descending.

"Grando!"

"Little Bela! You here too?" A somewhat astonished smile was playing about his lips.

"Do you think your plans will be carried out? I am enthusiastic!"

"You, Bela?"

"When will digging commence?"

"As yet, I know nothing at all."

"Take me along—please take me along when you go."

"Why, have you joined the working class?"

She clutched his arm. "I only want to be with you."

But Grando, self-controlled and educated to a sexless life, did not understand the girl's warm affection.

"But Bela, you must study first. I do not know yet if any Knabins will be employed. It is a man's job and will require strong muscles." He nodded to her and hurried to join some of his friends who were waiting for him.

She looked after him with tears in her eyes. Then a

smile glided over her face. "I'll go along in spite of you," she said to herself. "You big strong man! You haven't the least idea how stupid you are, with all your great muscles."

She found her car where she had left it and drove back to her subterranean home. That evening, her father, happening to meet her mother (now Supervisor in the infant ward), asked, "Has Bela spoken to you? She will have to make her decision."

"Bela will never become a working Knabina."

But Bela was sitting in her small chamber. The artificial sunlight had been dimmed by a pink shade. She was meditating on ways and means to fight her campaign for love—that love of which Theodore Werner had written—that love which had "made the world go around" six thousand long years ago.

CHAPTER II

A Serious Plot

BERLIN, still a surface city, with a population of 3,000,000 was still the capital of Germany. American architects and engineers had shaken their heads over the fact that the capital had not been removed into some district where caves and mountains provided natural protection. So far, it had apparently been spared by mere chance from a disastrous fall of meteoric matter. The space airdrome had been moved to the Brocken mountains, but the rest of Berlin's activities continued on the unprotected North German Plain.

When questioned on this subject, Ernesto Nernst shook his head smilingly. He came of a family famous in the annals of science and was at present Chief of the Health Department.

"No meteors can touch us here."

For Berlin had protected herself. At a distance of about 12 miles from the city, a strange lattice-work steel fence had been built. There were doors in the fence for leaving or entering the enclosed metropolis, but these were used as little as possible. Every few hundred feet along this fence were conspicuous signs:

CAUTION: IT IS DEATH TO CROSS OVER THIS BARRIER

People had laughed at these signs. They had laughed as well at the great power-plants that hummed day and night to provide electric current for the barrier. The airships and rocket vessels, which no longer came to the city, were warned by huge illuminated signs to keep away from Berlin. Few cars approached the city on the surface, mostly using the underground roadways. But when they did arrive at the barrier they were stopped—signals exchanged—and the gateways opened quickly and closed at once behind them.

From this peculiar metal fence, beams of force were projected in a great hemisphere. Berlin was completely enclosed by these invisible rays. They were so combined with specific electrons that, by the law of atomic disintegration, they destroyed instantly whatever entered their fields. Airplanes, birds, or meteoric falls of thousands of tons all ceased to exist when they passed over the protected zone. This, at least, was the theory. It had proved practical with small objects, but had not yet been tested by one of the disastrous falls of millions of tons of meteoric matter which were becoming more and more common in other parts of the earth.

Natural caverns, such as were to be found in the Hartz Mountains, had become valuable real estate. In this region, in the former Baumann Cave, a strange prophet had made his home. Professor Theodore Werner was tall and lean. His youthful eyes sparkled strangely in a face full of wrinkles. His hair hung to his shoulders and his white eyebrows were bushy and prominent. He was, according to his own statement, more than 100 years of age.

"Why die?" he would say. "Does not a good watch, well taken care of, run smoothly for much longer than a mere 100 years?"

Weird and mystic legends were woven about this almost legendary figure. His offices and laboratories were housed in the great cave in which he dwelt. Like all other subterranean buildings, they were illuminated and ventilated by artificial means. The sick, the lame and the blind came to him there in hundreds and went away whole and healthy. Hidden behind his operating rooms was Professor Werner's gruesome "Anatomical Department Store."

Had he lived seven thousand years earlier, he could not have escaped the common fate of witches and wizards. Long shelves contained thousands of jars and flasks. In these were preserved various organs and members of human bodies. There were eyes which were not dead, for the pupils expanded and contracted under stimulus. Fingers floated in jars, but when taken out they would bend violently at the joints. There were pulsating hearts, and lungs which inhaled and exhaled continuously. These specimens had all been obtained with their owners' consents, for they had belonged to incurable patients whose lives Professor Werner had been unable to preserve. He kept them in special serum constantly supplied with oxygen. They were used to replace diseased portions of the bodies of the sufferers who came to him to be cured.

"Who would throw away a watch just because its spring is broken or a little wheel has become rusty. It is foolish waste to permit a human body to decay just because an automobile has crushed its head."

Sentiment in such matters had long since passed out of existence in the world. Professor Werner received constant gifts from dying persons. He was in no danger of running short of supplies. When people remarked how young his eyes appeared, he would smile vaguely.

"That is hardly surprising. The heart of a young man is beating in my breast—and as for my eyes, they are not nearly as old as I am!"

Whether he spoke the truth or not, nobody knows, except his confidential assistant Will Gernhold. No one else had ever entered or left his operating room except under anaesthetics. No patient knew what had been done to make him healthy and strong, for Doctor Werner never answered questions.

He was undeniably queer, this professor. On long winter evenings he spent his time reading ancient volumes, obtained from the great public library. They were worn and tattered. No one else asked for such volumes, for the demand nowadays was for scientific works—the newer the better.

Novels! They were almost unheard of. Books that

dealt with human souls! Enlightened humanity had long known that there was no such thing. Man lived in this world only. There was no longer such a thing as a religious problem. A few churches still existed. Occasionally they were attended by some of the professional Mothers. The priests were mere mouthpieces of meaningless ritualism. It was these old books, dealing with marriage and love and other now meaningless fancies, which Theodore Werner and his assistant delighted to read. Their library had been decorated in the archaic style of six thousand years ago. Replicas of old furniture were to be seen, instead of modern steel chairs and tables. The artificial sunlight had been dimmed by curtains.

From this room, Professor Werner would depart and address again and again public meetings. He told them of former days and pointed out how much the world had lost by unsexing the workers. He was preaching to deaf ears. They understood him not. He told the blind of the beauty of color; to the deaf he tried to convey the charm of music. Laughing bitterly, and yet with undampened enthusiasm, he would return to his cave.

Now he determined to try different tactics. Why should he be bitter against people who did not understand him? One at least sympathised—his friend and assistant, Will Gernhold. He had adopted this young man when he had first become a worker. He had observed him carefully for years. During leisure hours Gernhold would lie outside on the grass, idly watching the unfolding of spring flowers, or gazing dreamily over the distant landscape. Without asking, Werner knew that the young man was thinking of love. Long-buried emotions had awakened in Gernhold's breast.

It was not mere sexual desire—this was still experienced by the adolescent workers generally. He wanted the companionship of a helpmate, which the old books had described so delightfully.

Professor Werner had determined that what was needed was an example to be set before the people. He would find a mate for Will Gernhold. So far, however, he had been unable to find one among the Knabinas.

HERMANN'S CAVE, not far from Werner's residence, was the scene of great activity. Giant machines caught stratosphere planes on great magnets and set them down on the top of the Brocken mountains. Long sloped cuttings had been blasted up the mountainside. No one except the foolish Professor regretted the ancient trees which had to be cut down in the process. Down these great grooves were launched steel girders, heavy iron drills and massive crane-arm sections. This heavy material was being used in the valley beneath.

Living quarters for the workmen had been built on the sites of the now ruined huts where miners of former ages had dwelt. The great Hermann Cave was to be the entrance to the shaft Grando Blanco planned to drive down to the core of the earth. In the construction offices, busy over drafting boards and plans, sat many draftsmen and engineers. There were Knabinas here, clad in the same fashion as their masculine colleagues.

* * * *

Once each month, the leaders of the white races met in convention. These meetings were held in various places: in Berlin, Paris, New Washington (or Mammoth Cave City as it was also called) and in Planopolis, the capital of the South American States, located in the province of Goya. Meetings were not held at Canberra, for Australia was too far away for the other members. Russia had not joined the Blanco federation. Her Slavic tribesmen acted as a buffer state between Europe and Asia.

Abraham Linco, the president of North America, wore a serious expression on his face.

"It cannot be denied that the Flavo-Nigro affair has assumed menacing proportions."

The Frenchman shrugged his shoulders.

"The civilization of the Blacks is at least six thousand years, and that of the yellows two thousand years, behind our own."

The German foreign minister inclined his head.

"Let us be just. Some of the aspects of our white civilization are of dubious value. Since the majority of our women have become practically sexless, the birth rate has considerably decreased. Six thousand years ago, Europe had 500,000,000 inhabitants. Today the number amounts to less than 250,000,000. America is no better off."

"What difference does that make? One of our machines today can do the work of ten people. In return for our decrease in population, we have received a very high standard of living. Poverty and unemployment, so common in history, are entirely unknown to us today. Living as we do, the earth has become too small for us. The colonization of other planets is a pressing problem soon to be faced. But while emigration was still impossible, we had to seek to limit the population by other means. When first automobiles were invented, mankind simply stopped the wholesale breeding of horses. We applied this lesson to the human animal. As long as science cannot construct machines to do mental work, it will be necessary to breed a limited number of men. We entrust this to selected members of our race.

"But with the Flavos and Nigros, these things are arranged differently. Their women nearly all expect to bear children. By the very fact of their backwardness in this matter they may eventually so outnumber us as to overwhelm our civilization."

The Frenchman's face hardened.

"That is because we have become too soft. Why did we not deal with the Blacks the way we did once with the Redskins? It would have been easy to straighten things out for all concerned with a whiff of poison gas."

The American objected.

"By the Charter of the Federated Blancos in the year 4009, every human being was expressly granted the right to live his own life as he wished. We shall always manage to keep the Blacks and the Yellows in their places."

The cities of those days, on the surface at least, were composed of long low buildings with walls of glass. Science had long abolished the need for agriculture. Unskilled laborers no longer existed. In the offices, there was need for very few assistants—merely Knabinas to operate the machines, and the executives themselves.

Cities no longer had any noise. Machines operated silently and efficiently. Factories were carefully managed and this was made easy for the manager by the use of television. He sat in his office and saw on the screen before him every operation being performed in the fac-

tory. Each product had long been standardized and each factory produced only one kind of article. By means of electric buttons, the manager at his desk controlled and regulated every piece of machinery in use. Only when a machine got out of order, a rare occurrence, was it necessary for a man to attend in person.

On each street corner, there was a square building, several stories in height. In it were apartments of standardized shape and size, always consisting of a living room and a bedroom. Each apartment was for the sole use of one individual. Meals were obtained in a dining room. The food was prepared in a central kitchen and served automatically on moving belt carriers. After dinner, all would sit in silence for a time.

In the former agricultural district of East Prussia—unsuited to industry—vast territory had been reforested. Wood was of course not used for fuel—this was supplied by central heating plants—but cellulose fiber obtained from wood was indispensable to certain manufactured articles.

Sunday was observed as the day of recreation. It retained nothing of its former sanctity, and its present name "Sporto" indicated how far the world had gone since it had been called the "Lord's day." Few understood the hieroglyphics necessary to the art of reading. Scientists read, for it was often necessary to search in old books. But they did not always devote their reading to serious research, for it was really quite amusing to read of the childish and absurd actions of humanity in earlier days.

On Sabbato (Saturday) there was a general exodus from the city. All day Sporto, the great barrier ray over Berlin remained unbroken. All factories were shut down, unguarded. Theft was unknown, for the thoughts of the thief would immediately betray him. Great four- and five-deck stratosphere planes carried the holiday crowds in a few minutes to various amusement resorts—mostly in the neighboring country districts where fine hotels were to be found. In the summer months, there was a four-hour service to Spitzbergen—where skiing was famous—or to the Arctic glaciers, or to the great tennis center in the Po Valley of North Italy.

MOSILIHORTSE, Emperor of Africa, was in conference with his ministers.

"It seems certain that Asia will attack within a few weeks. The outcome of the struggle (speaking among ourselves) can be clearly foreseen. The Yellows are centuries ahead of us. Our people—who nearly became slaves to the Whites—will lose their liberty to the Yellows instead."

Ras Alfari, one-time Emperor of Abyssinia and now Prime Minister of the United States of Africa, could not suppress a smile.

"You are right, Majestato."

Resounding titles were in favor at the Nigro court, although they had long been abolished in the rest of the world.

"I think there is a way out."

"I cannot see any."

"If we can seize Europe before the war with Asia really commences?"

"Your Excellency's words are very foolish."

"Not entirely. Just yesterday, I talked to a man. He had a plan whereby we could, within twenty-four hours, be masters of Berlin—the heart of Europe."

"Who is he?"

"Sam Bell—a Nigro, very much devoted to us and at present employed as chief engineer by Sinjoro Nernst, who is in charge of the electric barrier ray at Berlin."

"What can one lone man do for us?"

"Before I answer that, why not let him repeat before us just what he proposed to me."

Sam Bell was showed into the room, and made a brief bow to the Emperor. He had lived too long among the Blanco to still feel the reverence or sympathize with the formalities practiced in Africa.

The Emperor, a frown on his forehead, asked him, "Well, what is your impossible plan?"

"No more nor less than the destruction of Berlin—the prelude to our final and complete revenge upon the white race!"

"You act almost like a white, yourself!"

"On the contrary, I am the instrument that will destroy them!"

"Explain yourself."

"I am assistant to Sinjoro Nernst. Since my youth, I have worked and lived with electricity. I was chief electrician in the Lunar Mine and might have risen to higher rank. But when Grando Blanco was made manager, he saw me and refused to sit at the same table with a 'Nigger'—a human of inferior race! He requested that I be discharged. Thus I came to Europe.

"I have been working under Sinjoro Nernst for three years. He is about to resign from his position. There is only one man who can take charge of it as well as he did. That man is myself. He was willing to recommend me for the post, but again Grando Blanco came upon the scene. He persuaded the president of the American Republic to intervene in German affairs and has succeeded in obtaining a new policy that no one except a white man shall be placed in a responsible position in any Blanco state. That is why I hate him—not only him, but his whole race. I shall do what I can to destroy them."

"But how do you propose going about it?"

"Two ways. The yearly period of meteoric falls is near at hand. In former days, people used to enjoy watching 'shooting stars' in October. They have increased in intensity every year for centuries. Now, as we all know, they are yearly disasters. The passing of meteors through the air is often accompanied by poisonous gases. Last year, we had a considerable fall of such poison over Berlin. We could laugh at it. Half the world had been invited to see the spectacle. The pyrotechnic display of thousands of meteoric particles exploded into nothing on touching our barrier ray. The lunar astronomers prophesy an even greater meteoric intensity this year, basing their conclusions upon the solar prominences. Since Berlin is the only ray-protected city, a world-wide convention will be held there during this period to demonstrate the practicability of their system.

"It is not possible to remove all cities into caverns, as has been done in America, in the Fingal Caves of Britain, the Karst district and in the Harts mountains. If the barrier ray proves effective again this year, then the surface cities throughout the Blanco States will be provided with similar protection.

"Grando Blanco is even playing with the thought of protecting the entire world from all outside danger by surrounding the stratosphere with a world-wide barrier ray."

"Pure insanity!"

"Perhaps impossible, but hardly insane! Did it not seem a miracle to our forefathers when first they navigated their airships filled with explosive gases? If I stood before the world in those days and described only a thousandth part of the conveniences we accept as a matter of course, would I not have been pronounced insane? Nothing is insane unless it be in conflict with the laws of Nature."

"You are getting off the subject."

"Well, then, when this great convention takes place, I shall be in charge of the rays with Sinjoro Nernst. I can foresee with joy what will happen. I can see the dignified statesmen, famous engineers, 'Nigger-hating' Grando Blanco and all the rest of them! They will stand there looking up at the tremendous flares and fireworks as the great meteors burst in white heat and vanish at the touch of the impenetrable ray. But I, the 'Nigger,' shall be stronger than them all! I will throw the switch—break the current—the dome of rays will vanish! A thousand and a thousand meteors will destroy Berlin in a few seconds. She will be buried like Pompeii under a plain of ashes. My thirst for revenge will be satisfied!"

MOSILIHORTSE, whose primitive instincts had been aroused, jumped to his feet with blazing eyes.

"And you will be destroyed as well."

"If I were a fool—yes. But I am not. I have devised a little individual dome of rays—an umbrella for a cosmic hail-storm."

"What advantage to us would this destruction be?"

"The tidings of the disaster will race through the whole world. At that time, the annual hurricanes will be sweeping the southern hemisphere. Africa has airplanes and daring pilots. A thousand of them must be ready—all loaded with brave men. Each ship can carry two hundred fighting men—an army of 200,000 will be in readiness. The soldiers must be merciless—men who know how to hate! It will be easy to camouflage the airships in artificial clouds (I can get you the formula). It will be all the easier to preserve secrecy, for no one will suspect what will be happening.

"On Sporto, the cities will be deserted and the recreation centers crowded. In the midst of their gay amusements your ships will descend and their crews can vent the age-old hatred of our race upon the players. Thirty small planes would be sufficient to flood the unprotected cities with poison gases. I could supply you enough for this work, and the crews could be given the necessary training during the next two months.

"But what if the meteors destroy our own air force?"

Sam Bell laughed. "It is not likely, for the recreation centers have been carefully selected with such disasters in mind. But if meteoric matter should fall there, what of it? Your subjects number 200,000,000—can you not afford to risk a mere 200,000?"

"And what reward do you demand?"

"I want to be chief of the engineers—ruler of all Europe under the great Emperor Mosilihortse."

The Emperor forced himself to be calm, but his hands shook and his eyes gleamed. The lust for power was a living force in him. He suddenly rose to his feet. Just then the door swung open. Sulaika, one of his favorite wives (African women had not been in the least deserted), entered, unaware of the secret conference. She was a Berber—almost white in complexion—and Mosilihortse saw that she was not arrayed for public view. Angrily, he drew a knife from his belt and leaped panther-like forward to plunge it in the woman's naked bosom. With a scream she fell to the ground, but the Emperor stood, his now crimson knife held up in the air, and glared about him without ever a glance at his dying wife.

"Thus the whites shall die!"

With another leap he seized Sam Bell by the shoulder.

"And so will you, unless you keep your agreement!"

But Sam bore his furious gaze without flinching.

"I shall keep it."

"Then go with Ras Alfari and arrange for what you need. My treasury is at your disposal."

"My time is limited. I am supposed to be playing tennis in North Italy—but I do not play with people who do not respect me; at least, I do not play idle games with them!"

Two hours later, a small white cloud was crossing the Mediterranean from Africa. It traveled fast, seemingly against the wind, but no one noticed it. When it came to the Apennine Mountains, it dissolved and Sam Bell drove his rocket plane lower and landed on the shore of the Po River.

A few Germans, who did not share the American prejudice against the blacks, hailed him. "You are late, Sinjoro Bell."

He smiled. "My steering mechanism was out of order. I was almost wrecked in the mountains.

The next morning he was in Berlin as usual, the first man back on the job. He made no effort to control his thoughts, for he knew Sinjoro Nernst made it a point not to listen in on his transmitter to catch employees' thoughts on Monday mornings.* Had it been necessary, Bell could have guarded himself, for he had devised a clever arrangement of rays which would shield his mentality completely.

* * * *

In the offices of the *White Herald*—the leading newspaper of Europe—sat the editor, busily thinking over the day's leading article. He was comfortably seated in a chair-smoking a cigarette. Over his mind was a headphone, connected by a few strands of wire with a strange apparatus in the next room. This apparatus translated the thoughts and, by means of selenium cells, translated them into words which were at once set by a linotype machine. The finished slugs ran down a grooved channel into the form. Huge arms seized the finished forms and placed them on the presses. The machinery was operated by remote control. The machinist who did this was the only man, except for the editor, in the entire building.

The editor was finishing the last of the day's news items:

LUNAR OBSERVATORIES PREDICT FOR THE FIFTEENTH OF OCTOBER FALL OF METEORS OF EXTRAORDINARY INTENSITY

The German president has invited people from all over the world to observe the specta-

*Such eavesdropping, was however, a common practice with most heads of important government undertakings.

ele in Berlin. If the barrier ray proves impervious to the avalanche, the great plan of Grando Blanco to protect the entire world in the same way will be decided upon. In any event, however, this work will not be commenced until after the completion of Blanco's communication tunnel.

Half an hour later the bundles of papers were in rocket cars rushing out to the waiting stratosphere planes, which would distribute them throughout the Blanco States.

CHAPTER III

A Robot World

EIGHT days had elapsed since Bela Wilson had had her conversation with her father. There was no family life in the Villa Wilson. Since her mother was no longer capable of fulfilling her duties as professional mother, she had become Supervisor of the infant ward. Her father led the life of a shallow idler.

Bela had been living in the department of the Mother hood Institute devoted to girls of her age. When, as requested, she entered her father's presence once more she was confronted with three strange men. One of them was the official Supervisor of the Institute—an old man with a cold face. Another was introduced to Bela as a doctor, while the third was a comparatively young man in flashy clothes. His face was unprepossessing and lustful. He eyed the young girl greedily.

The Supervisor spoke: "Bela Wilson, you have reached the age when you must decide how you wish to render service to the state. You know that every girl, as well as every man, who wishes to be supported by the state must perform certain work in return. You have the choice of being a working girl—a Knabina—or taking up the duties of a professional mother. What is your advice in the matter, Doctor?"

The physician gave Bela an appraising glance.

"I cannot say definitely without a complete examination, but I am under the impression she is more suited to motherhood. She seems to lack sufficient athletic training for the arduous labors of a Knabina."

The younger man drew near.

"I could accommodate a few more young mothers in my house."

Bela crimsoned and her eyes grew wide with horror.

"I do not understand all this . . . you mean I should . . . this man here . . ."

The Supervisor shook his head. "Let's be unsentimental, Sinjora. In our state, motherhood is a job of work, like any other labor. The things connected with it must be regarded as biological necessities which cannot be avoided."

"Never!"

"Do you mean to refuse the profession of motherhood?"

"If I understand your words right—yes!"

The official shrugged his shoulders. "In that case, you have three weeks in which to choose your vocation. You will, of course, have to submit to all the conditions of an absolutely sexless life."

The younger man stepped close to Bela and stroked her cheek.

"Don't you dare touch me!"

Without another glance toward any of them, she left the room. The Supervisor turned to the physician.

"Just another example of the result of foolish books. I shall petition that the art of reading be not only discouraged, as at present, but absolutely prohibited as a subject for teaching in young girls' schools. I must be going, gentlemen. Sinjora Wilson, I must remind you that your daughter will of her own free will—or, failing that, by compulsion—make her choice of vocation three weeks from today."

On leaving the room, Bela had met an elderly gentleman in the hall outside. His features greatly resembled those of her father, but were cleaner cut and had little of her father's sensual expression.

"Hello, little Bela!"

"Uncle John—thank God!"

"Why, what is worrying you?" In spite of his technical training, John Wilson was still very human. He enjoyed playing the good uncle to his brother's numerous progeny.

"I must speak to you, Uncle!"

They went into one of the rooms.

"Well, what is it?" He looked at her with a jovial smile.

She told him her troubles, her face alive with protest.

"But it sounds very sensible to me!" I cannot understand how a girl could take up anything except technical work. To work—to know something! To triumph over difficulties—to help make man the lord of creation—that is the ideal of the age we live! I have read, of course, beautiful things about life in ancient days but, you see, that was all a mistake. One must not look back—but forward. I will tell you something: I can understand that a young girl like yourself might feel greatly perplexed by it all. Today I am going back to the farm which I manage. I need young people there—a wonderful opportunity for you to get your training."

Bela was almost in tears.

"I can't imagine myself sitting in an office with these man-like girls. I have no inclination for scientific research. I know nothing at all about technical things."

"Because you do not understand, you cannot know what machines I have. In America and Europe, there are none but technical machines. But I have complex machinery that labors with Nature herself—that creates, green pastures and fertile fields—that makes trees bud and come to fruitation. I am like a god of the old myths when I direct the machines. Come with me. I will speak to the Supervisor. When you see useless jungle transformed into smiling pasture, you will change all your ideas. You will have time to adjust yourself, at least, to the impossibility of one individual running contrary to the customs of a whole civilization. If you would like, you are welcome to come along.

To Bela, there was one tempting prospect in her Uncle's words—time to adjust herself. What was more, Uncle John was sympathetic.

"I will," she announced. "I will go with you, Uncle."

"Then I shall speak to the Supervisor."

Father and Mother Wilson, when asked for formal consent, displayed very little interest. The Supervisor did not object. "Why not, if you can make the young lady act sensibly? For my own part, I think she would make a better professional mother."

That evening Bela entered a space ship for the first time. It was a huge structure with four decks. It was, like all of the thousands of similar vessels which daily left New York, fed with the inexhaustible radium of the lunar mines. Bela could not help being amazed as she walked down the long passage, on each side of which were located the great lounge rooms and the staterooms. These latter had no beds—for the journey was too short to require them—but were attractively appointed. In each was a thought-recorder for the convenience of passengers wishing to make notes.

As the ship started, Bela seized a railing and fought a sudden dizziness for a moment. In a few seconds, New York had disappeared. It was of little use to look out the windows, for the ship ascended with immense speed. At times the ocean could be glimpsed through the clouds below.

John Wilson stood beside her. "Isn't it glorious to think of the progress humanity has made! A few thousand years ago, people crept slowly across the ocean in wave-tossed steamboats. All that is changed. Neither fogs nor hurricanes hinder our navigation. Our pilot guides us far above the clouds, which we see below us. All this is man's work. It is a small part of what we have done, and a very small part of what is yet to be done. It is humanity's conquest of nature."

FOR two hours the voyage continued, when Bela again felt dizzy.

"We are descending and shall be back on earth in a few seconds." The ship came to a rest, and a heavy cable was fastened to a huge mooring mast.

"Let's get out."

The air was so hot and damp that Bela was hardly able to breathe.

"We are in the tropics here," said her uncle. "It is 100 degrees Fahrenheit."

Exhausted by the sudden change in climate, Bela stood on the solid ground and looked about her. Not even a house was to be seen. Her uncle spoke to her.

"See that little car over there? Get in it. You will see a number of labeled buttons on the operating dial. Push the one marked 'Central' and the car will get you there in half an hour."

Bela looked at him, for she was a trifle afraid.

"And what about you?"

"I must go on to Buenos Aires in the space ship. I will be back in two days. It might be a good thing for you to get acquainted with our place by yourself. You will be comfortable and well taken care of."

"Are there any men on the farm?"

John Wilson smiled vaguely. "We have very reliable servants. They never speak, but take excellent care of things. You push a button and get whatever you want. Get in the car. I have to run along. The ship has already given the starting signal."

He leaped up the stairway and a moment later the vessel was racing up into the skies where it disappeared from view.

Bela gave a startled exclamation and was near to tears for a moment. Then she inspected the car. It was resting on rails and was tastefully designed. Bela hesitated—should she really go off by herself? It was beginning to get dark. Strange sounds which might have been screams of jungle beasts came through the night. Not a living thing was in sight, but from time to time a light showed in the distance above the forest.

Bela felt very much forsaken and lonely. If she pushed the button marked "Central," she would be taken, she thought, to companionship of some sort. She stepped into the small dark vehicle, and immediately its interior was illuminated by electric light. She sat down and observed the operating dial which was labeled: Waterwork—Control Room—Platform—Grain Elevator—Small Stock—Central.

All these names suggested a great agricultural establishment and were, as such, quite unfamiliar terms to Bela. Suddenly she heard, quite near her in the dark, the long-drawn howl of a wild beast. She flinched and hastened to push the button marked "Central."

"Away from here," she said to herself. "Out of this ghostly night to where people are!"

The car vibrated and started off into the darkness. Bela had no idea where she was. The heat was intolerable, even after the sun had set. At times, she thought she could see buildings flashing past in the blackness. Precisely as her uncle had told her, the car came to a stop after half an hour. The speedometer had indicated 125 miles an hour throughout the journey. Bela opened the door and got out of the car.

She found herself in a large courtyard with a few magnificent palm trees in its center. The court was enclosed by low buildings. Roofed verandas, half hidden with tropical greenery and brilliant flowers, fronted upon the open space. But although the entire courtyard was brightly illuminated from concealed lights, not a human being was in sight.

Bela looked hesitantly about and saw the little car disappearing again into the night. Her feeling of desertion grew upon her. What if there were no one on this farm, after all? Her uncle was not here. Perhaps she would have to spend the night in this courtyard.

She walked up the steps to the veranda to knock at the door, but the door opened by itself. At the same time, lights flashed on inside the house. Bela entered, carrying her little valise in her hand.

"Hello!"

No one answered. But the door closed behind her and she noticed through the windows that the courtyard was now dark. This was very mysterious. She was in a hall and she walked over to a doorway, which opened before she reached it. She entered a comfortably furnished room and the door closed behind her, the lights in the hall being extinguished at the same time. Perhaps, she thought, these servants of whom her uncle had spoken had orders to keep themselves invisible. She had the feeling that her every step was watched by them.

The room was delightfully cool, in spite of the tropic night outside. Two large fans provided ventilation. Bela rested for a moment on the couch and found herself crying softly. "Oh!! To hear a friendly human voice!" Then she stood up. John Wilson was her uncle and a thoughtful man. He would not have brought her here if any danger had threatened. Looking about her, she noticed a keyboard set in the wall and illuminated from behind. It was marked "REFRESHMENTS" and beside various buttons were small labels. They read: Cold Cuts—Hot Meat—Dessert—Fruit Juice—Rhine Wine—Sweet

Wine—Champagne—and a dozen more. A complete menu could be selected.

For a young lady who had eaten very little all day, it was a tempting prospect. Furthermore, she thought, someone would have to bring the food and she would at last have human company. With some hesitation, she ordered cold cuts and fruit juice. For a while nothing happened, except for a whirring noise which soon changed into a rattle. The door of the room swung open and in came a small boy carrying a tray in his hand. But with disappointment, she saw that it was not really a boy, but a mere automaton, mechanical and metallic. The tray contained slices of white bread, open cans of sardines, caviar, cold beef, plates and silver and a pitcher of ice water and a bottle full of fruit juice. The neck of this bottle had been neatly broken off.

The mechanical servant moved on small rails in the floor up to the table in the center of the room. His metallic lips opened and a mechanical voice said "Please." There was a slight click and the voice ceased.

The whole thing appealed to Bela's sense of humor. The food appealed also to her appetite. She began to understand her uncle's meaning. He evidently had ordered that the servants remain invisible. She placed the food on the table.

"Thanks." The robot made a polite bow and rolled out of the room—the door opening and closing behind him automatically.

The sight of the good food quieted Bela's nerves. Many of the delicacies had not been permitted at the Motherhood Institute. When she had eaten she felt much better, but very tired. She rose and saw that another door had opened itself. She went through it and found herself in a dainty bedroom and right behind this a beautifully equipped bathroom. The doors seemed to have no fastening device. But after all, she thought, what difference did it make? If anyone entered her bedroom, it could only be a member of the unsexed working class. She was so fatigued and sleepy after her bath she could scarcely reach the bed. She did not know the fruit juice had contained a sleeping potion. She fell asleep immediately.

IT was bright day when she awoke. Her watch showed one minute to six. At six promptly, a whistle blew. Instantly the world about her was filled with noise and commotion, indicating that the machines had taken up their work for the day. There must be people after all! She saw another keyboard set in the wall in front of her. It was labeled "BREAKFAST." How convenient this was! She pushed the single button and shortly after that the door opened and the robot boy rolled into the room. This time his tray contained a pot of steaming chocolate, cups, plates, sliced white bread, cold meat and marmalade. Very much delighted, Bela removed the things from the tray, whereupon the mechanical servant left the room.

After finishing breakfast, she dressed. She had entirely lost her feeling of loneliness and desertion, and determined to inspect her surroundings thoroughly. Even if the servants were forbidden to enter the living quarters, yet there must be people in the kitchen and she could find them there. She set out. Every time she approached a door it opened in front of her. She found the kitchen empty of human occupants. She noticed a window opened and a long iron arm swung into the kitchen carrying a small kettle.

Bela looked in startled wonder. From the stove a second arm swung, carrying a pot and holding it beneath the kettle. The kettle was then tilted and water poured from it into the pot below. This was now carried back and placed on the stove. The iron arm bearing the kettle swung out of the window without visible human control.

Where on earth were the cooks in this kitchen? She noticed a dial on the wall marked 'COCOA." Although she had already breakfasted, she pushed the button. She wanted to see whether someone would not now appear. A rattling noise commenced. A small pot moved under a water faucet and was filled. It went back to the electric stove which soon set it boiling. In the meantime, a bowl was placed under a metal bin from which powdered cocoa poured for a second. Then the bowl moved farther on and powdered sugar flowed in.

Still farther on, an electric beater mixed the two and the bowl was carried to the stove and emptied into the boiling water. The metallic robot rolled up to the stove carrying a pot on its tray and an arm lifted the boiling drink and poured it into the container. The mechanical servant left the room—evidently headed toward the living quarters—and the soiled dishes were placed in an automatic dishwasher which revolved a few minutes, whereupon they were returned to their proper places.

On shelves along the walls were great numbers of metal containers, filled with many varieties of food. Each different kind was in a vertical pile, so that the lowest of each different sort was within reach of a steel arm.

There had not been any human being in the kitchen. The system of automatic controls had not only prepared her cocoa, but sliced the bread as well and selected the proper kinds of cans and bottles from the shelves. Bela could not help feeling a little bit uncomfortable at the uncanny intelligence of this machinery.

"Please!"

In a loud voice the metal servant was calling from the bedroom. Bela hurried there. She almost believed the robot wore a reproachful expression on his face! She drank the cocoa. Thinking it over she decided that Uncle John must be a sort of hermit. Did he so dislike having human beings near him that he had gone to the trouble of designing all this machinery? But he could not manage everything by machinery. There must be men somewhere about. She decided to go out and take a look around the farm. She went into the courtyard, through the obligingly opened door. It was unbearably hot out-of-doors, but the scene was like Paradise. Parrots sat chattering on the branches. They were, she noticed, chained to their perches—as were the little monkeys in the trees. Now, she thought, someone must feed them! She walked up to the nearest tree and stroked one of the pets hesitantly. She almost feared that even these parrots were mechanical. They were, however, living creatures. But why were they chained?

At that moment, she heard something approaching. A delicate machine made of thin iron bars came gliding on rails across the yard. The animals did not seem to be startled, but rather interested. The machine came up to one of the perches and stopped. Two arms shot out bearing food and water in metal containers. These were deposited in precise amounts in the small food-receptacles

fastened to the perch. Then the machine moved on to the next perch, and continued until all the parrots were fed.

Bela could hardly believe her eyes. Were these ordinary machines—could they see and think? She walked out of the courtyard. In all directions from where she stood, there radiated roadways into the surrounding country. The landscape was flat, mostly composed of fields of grain. The sun shone with such overpowering warmth she could not walk far along the roads. But a small path led through the shade of some trees into a patch of lively green jungle. She took this patch and walked for some time beneath the impenetrable leaves. Great trees shot up their trunks to the green roof, matted and tangled above her. Enormous Lianas hung cable-like from the forest top down to the ground, where they were rooted. Countless birds and insects of many hues were to be seen and the sight and smell of flowers in every conceivable color startled her senses.

Now and then, a lizard would run out of the shadows and sit still to look at the girl with astonished eyes. The jungle began to have a depressing effect upon her and she rejoiced when the noise of a machine at work became audible. It seemed to be approaching. The path she was following went up a slight incline; the forest thinned out and Bela found herself on the top of a low hill. There was a wooden pavilion nearby, but still no human was to be seen. She saw the approaching machine that was making so much noise. It resembled a prehistoric monster. From a distance, it might have been a huge dragon, moving its colossal wings and roaring.

Bela turned to seek refuge in the jungle. Then she forced herself to look more closely. It was only a machine. It moved slowly along on rails. Great metal arms somewhat like windmills carried sharp knives. Behind the structure was a vast spread of plowshares and the tail was formed by a huge rake. The knives cut a swath through the jungle gras and bushes. The arms threw the debris behind it. The plows broke the ground into long smooth ridges and the tail broke up the lumps of earth and flattened the surface.

The great cultivating machine passed slowly by the foot of the hill and Bela observed the spectacle with amazement. For once more, she saw no human being directing the operations.

She remained there some time gazing at the landscape. The cultivating machine had passed out of hearing when once more she heard an approaching sound. The entire length of track below her moved a few yards nearer—closer into the jungle. In a few minutes, the great machine returned, taking a second giant bite out of the natural growth and leaving a plowed field behind it.

The girl hurried back through the jungle. The heat had been slightly relieved by an approaching thunderstorm, indicated by massed clouds on the near horizon. The house was some distance away and she looked about for possible shelter. But she found she was not on the same path she had come on. Presently, she came out on a wide road and close at hand was a rocky hill. Steps led up the rock into a natural grotto. Up the steps and into the small cave she hurried and just in time, for the storm burst as she reached her shelter. As she entered, the interior was suddenly lighted by electric bulbs. It was filled with machinery. In the rear, a small cataract poured down. The water was received by penstocks and led to turbines. Bela realized that she had found the power plant for the farm.

A strange pool of water in the center of the cave attracted her attention. A drain led into it from the roof of the grotto. The basin was evidently part of the machinery. It was slanted and divided into two parts. The lower part was filled with water and the upper portion empty. The drain carried the rain water from above the empty compartment. Gradually the basin acquired a slow rocking motion. As it rocked, a metal plate came in contact with the upper edge and a shrill whistle made Bela wince. The noise was presently answered by other whistles from all directions, both near and far, over the farm.

At the same moment, the machine stopped working. The turbines ceased their droning activity. The working day had ceased and sudden silence came upon the entire farm. The storm no longer held sway and the sky was clear in the short tropic twilight. Bela stepped outside rather frightened at so many things which she could not understand. She was happy to see beneath her and not far away the farm buildings she had left earlier in the day. She hurried down the steps and made her way back along the road. There were tracks set in the surface, but she paid them no attention. It was getting quite dark as she hurried along.

She was suddenly touched gently on the shoulder and a warning whistle sounded in her ear. Bela leaped to one side. An enormous machine was gliding down the road. She wondered who or what had warned her until she saw two long thin arms which stuck out in front of the machine like the feelers of a moth. They were still vibrating. She put out her hand and touched one of them and once more the whistle sounded. The machine itself had given her warning of its approach.

Her head whirled dizzily. Never human beings! Nothing but machines! Machines with brains! Although she was a daughter of the machine age herself, Bela rebelled against this state of affairs. It was night once more and she had found not one soul to keep her company. She must again push buttons and be served by the metallic robot with food which machines had prepared and chosen for her. Her nerves were jumpy. She could scarcely walk to the entrance of the courtyard. But when she came in sight of the windows, her heart began to beat more rapidly. There was a light inside the house!

She hurried forward, wondering who had arrived. As she came to the veranda steps she hesitated. Who could be inside? But just then the door opened and John Wilson's stocky figure showed in the opening. His kind face was smiling at her. She hurried up to him with a glad cry. The dark load of loneliness was lifted at last from her heart.

CHAPTER IV

Bela Decides

JOHN WILSON could not understand Bela's emotion. Either he did not notice it, or he ignored it purposely. He was in fine humor. "Well," he said, "how does the young lady like *Santa Machina* Farm?"

Bela looked at him in astonishment for a moment. She was a little ashamed of her recent emotion. "What did you say the name of the farm was?"

"*Santa Machina.* What else could you call it? It is the great god, Machinery, that rules the world nowadays. Have my mechanical servants given satisfactory service?"

"How could you have sent me here without telling the kind of place it was, Uncle! I was all alone. There is not a soul on the farm—at least I have been able to find none."

"That's just it! Supposing I had had the most carefully selected people here; how would I know what they might do while I was away? Can I be sure that my best friends do not conspire with my enemies when my back is turned? Suppose I had left a supervisor in charge. He might have gone off on a spree and taken no care of you when you arrived. Or if I order a good meal to be served, how can I tell but that the servants might steal the choicest portions for themselves?

"But my mechanical servants! Have they failed in any particular? You see how simple everything is. I decide what I wish to eat when I come home at night. You have seen how the provisions are kept on the shelves—that of course must be done by a man—and all that is required day by day is a simple mechanism to convey my chosen foods from the automatic kitchen. There is unlimited choice at my command. I can dial a code 'A' under the button 'Cold Meat' and the lowest can of caviar and of cold beef will be taken out and opened. A certain bottle of fruit juice also goes with this code. All will be placed on the tray. Now a man might forget or be inefficient—he might go on strike. These things a machine will not do. The order will be executed exactly as it is given."

"But what if it fails?"

"Then it is the fault of the mechanic. My machines operate over the entire farm without trouble. Everything has been thought of. Nature provides in this climate a rainfall at the same hour every day. You must have noticed it last evening.

"The rain must fill the basin in the power grotto at the correct hour. The basin must tip when it has been filled and give the signal to cease work for the day. At night, the water is sucked out of the pool and the basin tilts up again, starting the machines to work at exactly the right hour every morning. During the night the machines must be lubricated. Oil wells on the farm provide the necessary liquid automatically. For these metal servants must have food, of a sort, just as men do.

"But everything is timed accurately. Just as the water-carrying arm must fill the kettle at ten o'clock every morning, so must the bird-feeding machine arrive at a precise hour to provide food for my pets. Any unpunctuality is impossible. But with human workers, this could never be avoided. Moreover, it is hot here—too hot for human labor. Yet this very heat makes this great farm so fertile that it can, in one year, produce as much as the whole of Northern Europe.

"Tomorrow, you will go with me on a tour of the entire establishment and see how all my machines work. Only when one of them develops mechanical trouble is human intervention necessary."

"Those machines frighten me. They almost seem to think."

Her uncle laughed. "Frozen thoughts! You see, that's the difference. Every one of these machines *is* one certain thought, so to speak—an embodiment of one task. This one task it executes. But a man with a thousand different thoughts in his head cannot always think clearly on the task at hand. Well, so much for that? I can see that a certain young lady is hungry. Why not push the 'Hot Meat' button and await the delicious broiled beef prepared by our thoughtful servants?"

Bela looked at him half awed and half amused.

"I suppose one of your machines will go out and slaughter an ox! You don't pretend to say that fresh meat will keep for months on your shelves?"

"Certainly not for months—for days, yes. Our refrigerators are efficient. But then we live in the year 8000. Wait another short 10,000 years and machines will go out and hunt game for our table."

He pushed several buttons and before long an excellent supper arrived accompanied by ice-cooled champagne. After they had finished eating, John Wilson rose to his feet. "Now for bed," he announced. "Tomorrow I will show you the farm."

"I will sleep more soundly tonight with you in the house."

"Very foolish of you. I am a man. It so happens that you have confidence in me, but who can fathom the thoughts of a human being, without constantly using a thought receiver? You trust me because you think you know me. In my case, you are right. But with another human, you might be wrong. Now my machines—do you think any one of them capable of harming you? Do you even think any harm could come to you in this house after my machines have closed the doors and connected the high voltage wires? Good night. Sleep well, even if there has been no sleeping draught in your food tonight. There was last night, as you may have suspected, for I had some consideration for a young lady's nerves. Don't forget to apologize to our good machines for your unkind thoughts before you go to bed!"

Bela was wakeful for some time that night, but she fell asleep at last. When she awoke in the morning, she pushed the button and greeted the little robot with a friendly smile.

"My goodness!" she said to herself, "That thing is grinning back at me!" She had forgotten that the automaton had smiled at her the day before. He did so invariably when his voice record pronounced its mechanical "please."

John Wilson was all ready to go out when Bela came down, rested and refreshed by her bath.

"Let's go along."

The little car was ready in the courtyard. Its interior was kept cool by a refrigerating system, so that the tropical heat had not to be borne by its occupants.

"Uncle, what is all the whistling for? Your machines do not need to be awakened, do they?"

"No, but I do when I lie in bed. It indicates, moreover, that everything is in order. There are no supervisors to report a machine late on the job."

During this conversation they had traveled rapidly through endless fields. Now they stopped before a small

control-station with glass windows. Inside this room, the air was also artificially cooled. In its center was a large table covered with a sheet of glass, over which a cloth had been thrown.

"Now look around you, Bela. Here we are exactly in the center of the farm. Look through these binoculars. There, rest your hand on the rail."

BELA did as she was told. A vast plain stretched away on all sides. Here grew cotton, coffee, cacao and grain. Machines of impressive size were everywhere to be seen, moving about from plant to plant; some searching with metal feelers picking fruits and berries and throwing them into containers. Close beneath the station was a great threshing-floor. On this were thrown bundles of grain brought in from the fields by mowing machines. Here, automatic flails threshed out the grain. The kernels were sucked up into elevators and the straw (already dried under the fierce sun) was thrown aside in great heaps, to be burned.

"There must be someone to set the straw alight."

One of the piles had burst into flame.

"Not at all. A magnifying glass has ignited the straw the moment it was moved within reach of its rays. We have no use at all here for the straw."

A machine of one kind or another glided past every few minutes, carrying water to irrigate the fields, or bent upon some other helpful errand.

"We are independent of climatic conditions. Since we have rain only late in the afternoon, we irrigate in the morning. At night, when the sun sets, our great radium lamps send out their life-giving energy, thus making possible four crops a year. This is another reason for having no humans about—no worker could stand exposure to radium!"

"But these machines here must be thinking! See!" Bela was staring at an enormous plowing machine which came down the track. Apparently it struck some obstacle and was forced to stop. Another machine got in its way and had to stop as well. It waved its arms wildly, seeming to make an attempt to start the first machine again on its course. Then it tipped slightly and shook, as if it had bowed and shaken its head regretfully. Then it lunged forward and pushed the first machine out of its way. The fallen machine fell off the track and down a slight slope with a loud crash.

"The machine thought. It wanted to help its comrade in need."

"No sentiment, my child! One of the machines went out of order. Now I must come to its assistance. The other machine came in the opposite direction. Their feelers became entangled. As luck would have it, the resulting conflict of forces did not upset both machines, but the second one was able to continue on its course."

Bela passed her hand across her forehead. The control station was slowly turning around, making it possible to view the entire landscape without moving her head.

"Then this is the whole farm."

"Come here a moment."

John Wilson had removed the cloth from the glass-topped table.

"What kind of toy is this."

"Yes, it looks like a toy. But it is something very serious. Here you see in miniature the entire farm, of which only a small part is observable from this station. There is a replica of every field, every road and even every machine, which look like toys. You can see that everything is moving. Each movement is electrically translated to these models. You see the small red light there? It has just gone on. It marks the spot where the collision of the two plowing-machines has just taken place.

"And now about your work. To supervise this entire farms takes no more than one girl, and she need have little technical training. You have but to sit here and do nothing else but watch the operation of these machines as you are doing now. If anywhere a red alarm light flashes, then you will report it by this transmitter on the wall to the technical station. This is located in a valley near the coast because these technicians could not be accommodated in this particular zone. If I radio the signal now, the men will be here in rocket planes in less than half an hour.

"At first we kept a detachment of mechanics on each farm, but that did not work out very well. First of all, we could not keep them busy all the time and, furthermore, a gathering of humans in the tropics results too easily in an outbreak of fever. Now, one efficient headquarters takes care of a great number of farms. Since the population of the earth is not any longer excessive—and this will not improve if all young girls think as you do—we have to be economical with human labor. We build our machines to do the jobs by themselves, as much as possible."

Bela's mind was in some confusion when she returned to the central buildings with her uncle. She was left alone here for some hours and in the late afternoon John Wilson called her to his office.

"Well, have you decided to take charge of the control station, or do you want to go back with the next space ship? If you go back, of course, you must choose between professional motherhood and sexless training as a Knabine."

"Where do you do your work, Uncle John?"

"Usually here in the Central, where I can supervise the entire farm."

"I think I would like to try it." She had decided very quickly, for she did not ever want to go back to be subjected to more questioning and examinations in her father's house.

"All right then. A probation term of one month is customary. You will have to stay that long whether you like it or not. If you definitely agree, I will notify the supervisor in New York by transmitter."

* * * *

The next morning Bela sat alone in the glass-enclosed control station. John Wilson had been right. The appearance of the flowing fields, of the blooming shrubs and verdant trees was glorious. The distant horizon was rimmed with snow-capped mountains. At the foot of the mountains extended vast stretches of jungle, not yet brought under the hand of man. Brilliantly colored and exotic birds were to be seen in all directions, and Bela admired the great beak of the toucan and the sheen of the Parrakeet's feathers.

Tapirs were to be seen at a distance, drinking from the creeks still full from the thunderstorm of the previous evening. Over the whole landscape lay a warm earthly

odor of fertility. There were hours when she would entirely forget her machines, but would sit staring at the new wonders to be seen on every hand. It was more than ordinarily fascinating to a girl who had spent all her life in a subterranean city—used to having even the sunlight artificially provided. After the daily cloud-burst had ceased and all work with it, Bela would not always immediately return to the Central buildings. She would walk through the still-dripping jungle paths, or watch the gentle animals so often to be seen for they had no fear of man. At times, she would find herself in tears, without being able to find any reason.

At first, John Wilson found occasion to criticize her lapses from duty. But she soon became accustomed to the work and tended it almost subconsciously. Why, she would ask herself, must she always keep thinking of Grando Blanco?

One evening her uncle said "Grando Blanco's great plan has been approved. He has, himself, taken charge of the work which is already begun."

"Isn't he in great danger, then?"

John Wilson shrugged his shoulders.

"It's too bad that he is a human being. A machine could be repaired if it were injured. But if anything happens to Blanco, that would be the end of him. But then, what real difference does it make? Someone else will be found to take his place."

He could not understand why, after this remark of his, Bela had jumped up and hurried into her room. He would have been even more puzzled if he had known that she cried herself to sleep. John Wilson would not even have understood such a foolish sentiment as mourning for a dead friend. He would have regretted the loss of an efficient worker, that is all.

• • • •

BELA was alarmed on her return to the Central buildings one evening. Instead of her uncle's voice, she was being addressed by a talking-machine record:

"I have had to go away for a week. Everything is prepared in the house during my absence. Watch the machines carefully."

Bela again experienced the sensation of loneliness. Since she had been at *Santa Machina*, she had seen no human being except her uncle—and now he was gone again. There had been workers somewhere on the farm during her stay, fixing broken machinery from time to time, but their work had not brought them near her. Why, she thought, should she miss her uncle—who seldom spoke and, when he did, only voiced sentiments entirely out of sympathy with her own?

She slept soundly that night, however. The next morning, when she realized this, she was angry for she knew John Wilson must have again mixed a sleeping potion in her meal. She rode out to the control station as usual, feeling restless and a little irritable. In the evening, she watched the machines returning to the shops for the night. It had been that way every day. She could not help feeling that John Wilson was still directing them. But he was gone, without question, and to her mind the machines had become thinking beings once more. Not only that, but their swinging arms and rolling wheels gave her an uncomfortable feeling.

Two days before the end of this terrible week, the daily storm had caused a drop in temperature greater than usual. Bela had long puzzled how the machines could go home by themselves after the power had been shut off for the night. Choking back her distrust of them, she determined to solve the problem. All the roads, she found, were slightly inclined toward the Central buildings which were build on a hill and surrounded by a long wall. The machines rolled down as far as this wall and were stopped by heavy buffers. Here at the foot of the hill was their nightly parking place.

As an iron giant came down, its feelers either touched the buffer or the machine in front of it on the track, as the case might be. Instantly the oil would begin to flow and automatic brushes set to work cleaning the working parts. Then the last of the huge monsters approached—the same one that had frightened her on the very first day. Two dark-red lamps were glowing on its forehead. A huge prow projected from its fore end to clear the track of obstructions. It resembled in its shape the horn of a steer—but on an enormous scale. John Wilson had, in fact, once jokingly referred to this particular machine as "the bull."

But to Bela's horror, "the bull" suddenly uttered a metallic shriek and turned about to come straight toward her! It came with ever-increasing speed. Bela turned and ran. It was impossible to dodge, for the narrow row had been cut deep through the rock. As she ran, she heard the rattle and crash of the monster getting closer and closer behind her. She ran as fast as her feet could carry her, but the colossus was faster.

Night was just falling. Glancing desperately over her shoulder, she saw its gleaming lights and could almost feel the touch of its mighty horn. Was the thing alive? Did it know that she feared it? Was it really pursuing her, as it seemed, in actual hatred? The last part of the road inclined up to the Central buildings. Bela was panting with exertion when she arrivad in the courtyard and stood breathless on the veranda, staring with terrified eyes.

A tremendous crash was heard. The wall began to sway where the monster had struck it. Stones and mortar fell and the iron prow forced its way through structure and reached far into the courtyard. Then the machine came to a stop, though the wheels were still churning around madly. At last this ceased, and the iron monster withdrew its prow and began to roll back. The breach in the wall permitted Bela to observe it as it reached the foot of the slope, swaying wildly and finally tumbling over with a resounding crash. It lay there, its arms extending up as though appealing for assistance.

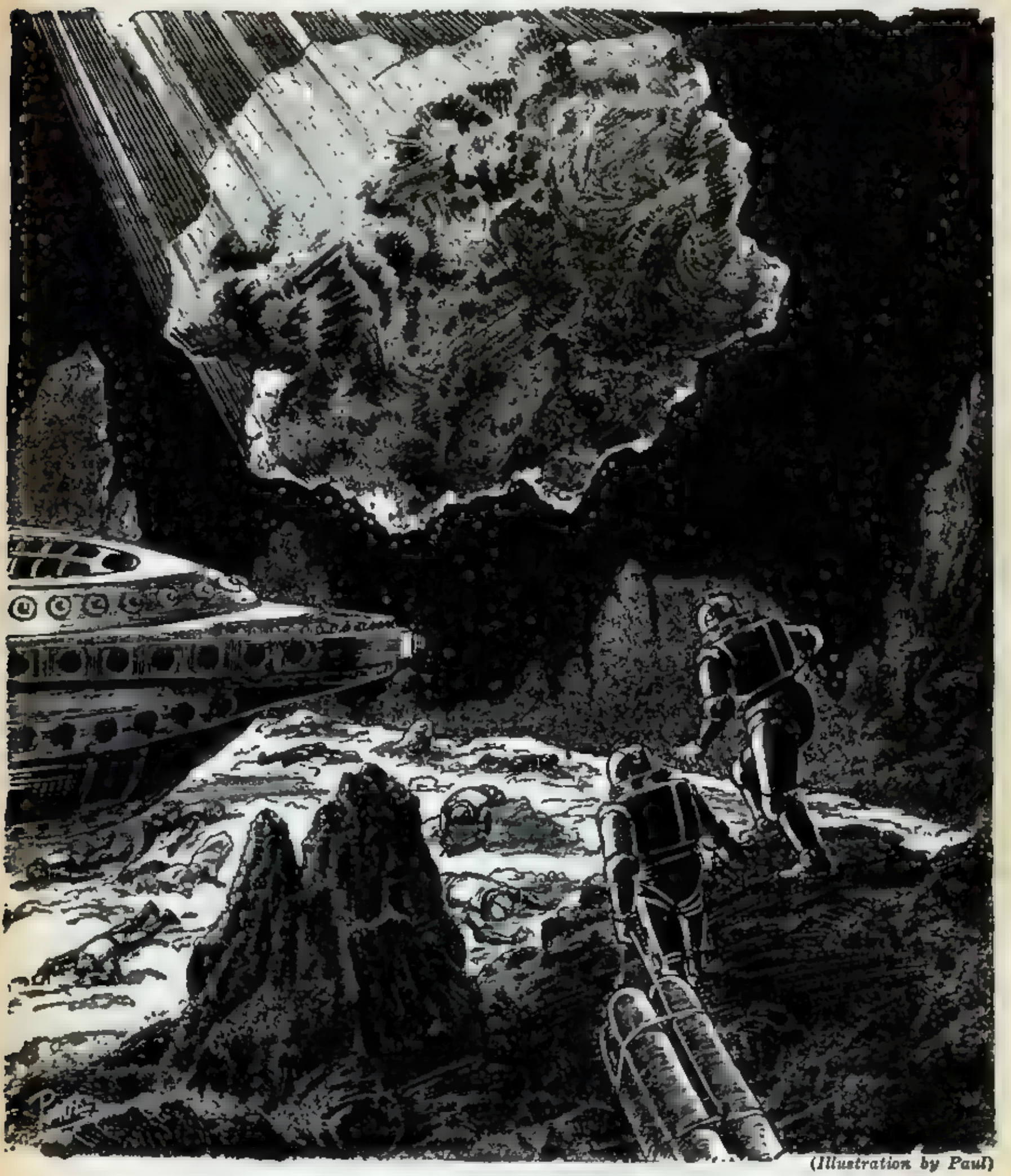
Something quite natural had happened. A defect in the switch at the shops had caused the machine to slide rapidly down the incline and up the next slope that led to the Central buildings. The enormous momentum thus acquired had carried it up the slight hill and provided enough additional energy to almost break through the wall. After being brought to a halt, it had of course rolled back and, traveling at a much greater speed than the rails had been planned for, it had finally upset.

Bela's inflamed imagination had provided all the mystery. She had felt that the monster had run against the wall in blind rage and thus injured itself fatally.

(To be continued)

CASTAWAYS OF SPACE

By **Arthur G. Stangland**



(Illustration by Paul)

Looming larger and more menacing than ever, the vast boulder swirled, filling a great portion of the sky. "Hurry or we will be too late," Kraft mumbled.

CASTAWAYS OF SPACE

The author of "50th Century Revolt," "35th Millennium," etc.

"WELL, another day or less of spiralling around this damned rock, Kraft, and I guess we'll finally land," exclaimed the captain, turning around from the big port glass to look at a bulky, muscular man sitting across the room at a built-in metal table. "We've drifted just close enough for her to trap us. Well, guess if it wasn't this one it would be another."

"Which one of 'em do you s'pose it is, sir, Juno or Pallas?" the second man asked anxiously. His hair was badly singed, and a coarse stubble of beard covered his face.

"I don't know," the captain admitted, "it's fully 500 kilo's in diameter, and pretty rough looking to me. Doesn't make much difference, though, I guess, none of these asteroids have any atmosphere."

"Thank God, the explosion didn't wreck this oxygen room," the other returned, "we've got at least enough air tanks in here to live for a week yet."

"And after that?"

Kraft stared back into the blue eyes of the calm man, at a loss to answer. A silence fell between them, a silence that was as profound as it was appalling. There had been many of them since the after bank of rocket tubes had blown several days before, shattering the tail of the freighter *Mercedes* in a frightful series of blinding explosions, and opening the hull seams to let the precious atmosphere escape. Captain Rogers had risked his life to save what he could of his crew in the holocaust. Kraft and he were the lone survivors of the catastrophe. But fate seemed to have saved them for a more horrible end than the merciful instantaneous death of the others. They were helpless in the derelict, for even the radio instruments had been destroyed.

ARTHUR G. STANGLAND

PICTURE a desolate world in the infinitude of space . . . . desperate men battling for very life under the cold stars . . . . seconds and minutes spelling either terrible doom or glorious life and freedom . . . . a hurtling world blotting out the heavens . . . . and you have a vision of this gripping story of adventures in space. When men go journeying into the infinite they must expect madness to follow on their heels . . . . always lurking . . . . they must expect sudden death and disaster with no one to look on or help . . . .

In this story we learn how in the cold silence of space men meet death . . . . and how some manage to avoid it . . . .

Rogers went back to the port, and continued to stare out upon the rugged surface of the nameless, dead world, one of hundreds that slowly crawl about the sun between Mars and Jupiter at a high angle to the ecliptic. The tragedy of space had left its mark on Captain Rogers' adventurous, young face. The sight of maimed and dying men in that terrifying hell of exploding rocket chambers had changed the expression in his deep blue eyes from bright, youthful expectancy to one of sombre reflection and sadness. A several day's growth of sandy beard sprouted on his dirty, smudged face, and his straight blonde hair hung carelessly over a slightly receding forehead.

Slowly but inevitably the *Mercedes* was obeying an immutable law of celestial mechanics to circle the planetoid in a contracting spiral that drew her closer and closer to its airless surface. Sometimes it swung out of sight with the slow revolution of the derelict about a rather dubious vertical axis. Sometimes small fragments of meteors rattled with a dismal, hollow echo off her hull.

A drear, sombre and colorless world spread out below them to receive the debris from space. Rogers watched the stark, black landscape of jagged, sawtooth crags slip by beneath them with an awakening interest in life that had previously burned at a low level. Those pinnacles! Just like a sea of knives waiting—waiting to impale the *Mercedes*, to rip and slash her hull like a mere shell of paper.

An involuntary shudder passed through him at his mental picture. He suddenly wanted very much to live, to see again with his own eyes the glorious green vegetation of Earth, to smell the fresh winds from country meadows, to battle for his life in man's natural element. And to do that he must outwit that devilish fate that forever lies in wait to seize the unwary space adventurer from Earth. That was it! Outwit space!

"Yah, damn you! I'll outwit you—I'll best you at your own game yet! Ha, ha, ha!"

Rogers stood at the port shaking a fist savagely at the brilliant diamond-studded heavens, laughing madly. And when he swung around, a chill of dread ran up Kraft's spine at the glassy gleam in his eyes. Immediately, the big spaceman got up from his chair, and floated more than walked across the deck to the captain.

"Come, sir, a stiff drink of brandy will fix you up!" he suggested, taking the other's arm gently, and leading him away from the port. But the captain continued to rave and mumble in hysteria until Kraft forced a glass of strong liquor on him. The big man, a machinist's assistant, watched his superior anxiously, as he downed the glass. His large face looked strangely pale, as if he were terribly frightened. Kraft was recalling all the ghastly, weird tales he had heard of men drifting helplessly in space. The first sign of their inevitable end had

appeared. They would both eventually go stark, raving mad!

It was twenty hours later that Kraft suddenly turned from his vigil at the port where he had been watching the passing needle-like tusks of rock. Excitedly he ran to the sleeping captain.

"Rings o' Saturn! There's a living man down there, captain!" he shouted almost hysterically, shaking Rogers roughly. "Wake up, man!"

The captain awakened with a startled jerk. For a moment he stared uncomprehendingly at the man until he repeated his outburst. Immediately he was on his feet and striding lightly for the port.

Some thirty feet below on the ground stood a man in space suit, staring stolidly up at the derelict floating lower and lower on a long slant for the surface. He cast a sharp shadow on the uneven surface.

"Doesn't seem to be alive," observed the captain, waving his arms to attract his attention.

Suddenly the man seemed to snap into life. Crouching low, he launched himself into space with the swiftness of a catapulted stone. Kraft and Rogers stared in open mouth surprise, as he grew in size below them and appeared to float lazily up to the ship, nearing the peak of his jump. He grasped the protruding sill of the air lock near the port. In the dark uncertainty of the man's helmet Rogers caught a glimpse of a wide grin, and he waved back a hearty greeting.

"OPEN the lock and let him in!" ordered the Captain, and in the next breath he gasped in alarm as he turned back to the port.

The man had a thick, massive mallet in one hand, and even then was in the act of swinging it back for a tremendous blow on the granite-glass port. In that instant Rogers caught a full face view of the stranger. What he had thought was a happy grin was the horrible grimace of a mad-man. The eyes, large and cavernous, burned with a wild gleam in a gaunt emaciated skull-like face.

"He's crazy!" yelled Kraft, backing away instinctively.

The mallet smashed against the strong glass with a sharp report that hurt the ears. A small crack appeared on the outside of the thick partition.

"Get into your space suit!" shrilled the captain, leaping for the opposite side of the chamber.

Frantically, the two men broke out space apparel from air-tight lockers. Another heavy blow, and the port glass cracked in a radiant where the mallet struck. Quickly, both men slipped into the bodies of their suits, screwing up the plate sections with frantic fingers. Death was banging madly at the port glass, a terrible death that would rush in and suck their lives out very soon if they failed to make their helmets fast in time. Fortunately, they were just clamping them down on the big gaskets when the port collapsed with a loud report. The atmosphere of the cabin swept out the jagged orifice like an irresistable tide through a valve box. Rogers felt the pressure drop. His own air supply was just beginning to sizzle into his suit and inflate it.

"Come on, Kraft, grab a rod!" he commanded quickly into the small radiophone each suit carried for short distance communication. He himself took down a stout pike.

In a trice the two were hurtling across the airless chamber, breaking their flight against the wall with their hand weapons. Like one frustrated, the captain gazed out the porthole. Too late. The madman was dropping to the ground even now. And none too soon, for the *Mercedes* weary of her drifting in space was seeking a final resting place for her torn carcass. With a dull shudder that traveled through her hull, she grounded hord against the peak of a sharp crag that fended her impact solidly, forcing her nose aside and upward inexorably, while she climbed higher and higher on her keel, only to slip backward and downward again into a little valley some twenty meters deep.

Down the iron-sheathed side of the "mountain" she bumped, sending unpleasant high-pitched vibrations through the two men, as her keel scraped over thick serrated dikes, at times threatening to tear her under-plates off. At last the derelict reached the bottom of the corrugated incline, and brought up with a solid impact against a jutting ledge. The *Mercedes* had found her eternal resting place.

The two men gazed out upon the fantastic scene in awe. They lay in the bottom of a little "valley" formed by the rugged backbones of two ridges that wrinkled the surface of the asteroid world. The grotesque, jagged landscape might have been created by a gigantic axe that had hacked indiscriminately at the whole scene to create a monstrosity of the imagination. The sun, over six hundred million kilometers away, cast a weak radiance upon the angular facets of projecting mica schists, giving a startling contrast of solar reflection against a deep black background of the heavens. Over the top of the surrounding melancholy peaks swooped a big lump of angular debris from out of space. It smashed headlong against the opposite side, splintering into a million pieces, and cutting a deep groove in the face of the rock it struck. Thus had the scarred face of this nameless, dead world been made by the innumerable visitors from outside. The vault-like silence that permeated all things about them began to weigh upon the two men. There was a *quality* to that silence—the silence that had already swallowed up their mad attacker.

"Wonder where that demon went?" ventured Kraft.

"He seems to have disappeared up this valley somewhere," returned Rogers, glad to break the frightful quiet. For a moment he was silent. Then—"Say, there must be a ship close around here somewhere if that devil has air to live on!"

"Maybe we can escape from this hell after all!" boomed Kraft, his voice rising in sudden hope. He sprang for the airlock controls, opening the inner door and cutting out the automatic hull door lock. No need to keep it closed now; there was no air to save.

"Take your steel club, Kraft, we may have use for these primitive weapons," Captain Roger admonished the crew man. "Too bad we weren't able to save a couple of rocket guns."

Outside, they contacted their first solid ground in weeks. There was a satisfying sensation to it, even though it was the sharp surface of a weird, deformed world. Rogers took several steps, as if testing his own weight.

"It's a strange thing, Kraft," he began in a puzzled tone, "but I have a feeling I should be lighter on a body of this apparent mass. Perhaps the density is greater than I expect."

With a little effort the bulky Kraft leapt into space some six meters, turning in his flight so that he came down

on his back in spite of his frantic efforts to hitch himself erect.

"That is a good object lesson," observed Rogers, regarding the chagrined spaceman seriously through his helmet port.

"Why?"

"Don't try to leap too far on this asteroid. You might come down and crack your helmet port. Take it gradually until you become used to it."

HE turned around to face the sun in the black vaulted heavens. Slowly the shadows from the projecting rocks of the ridge were beginning to lengthen. The planetoid was revolving.

"Come on, Kraft," he cried, taking a firm grip on his rod, "let's follow this ravine to its head. Maybe we can find something interesting when we get up a little higher, but I doubt if we can see more than a kilometer."

The two men strode along the uneven floor, taking long steps of several meters at times to clear an obstruction in their way. Rogers kept a wary eye for their strange attacker along the ridge line above them. Perhaps they should have taken that route, but the going up there was many times more difficult than the bottom of the ravine. He experienced a nervous thrill when he recalled that awful face at their port, just like Death hammering at them. Maybe it was Death! Maybe *they* were the ones who were going crazy in this God-forsaken world! How could one be sure of anything in this weird hell? But enough of this brooding, he must get a grip on himself. He would talk to pass the time, and keep his mind off those uncanny speculations.

"Wonder where his ship is, and if anyone is alive on it?" he ventured, swinging his steel bludgeon to feel its powerful force.

"I was just wondering if there is a ship hereabout, captain," answered Kraft pessimisticly. "Maybe someone dumped him off here when he got too violent to have on board."

"Oh no," Rogers disagreed, quickly if not hopefully to reassure himself, "there's been no ship within days of us, and he couldn't live that long without food and water, though I do admit he looked pretty scrawny—say, what's that? Lead sulphide?"

The captain suddenly stopped and examined a black piece of rock that reflected the sunlight from many sharp irregular facets. He struck it with his rod. A piece chipped off.

"That's galena, Kraft!" he cried in surprise. Then he looked more closely at the bristling slopes of the ravine, "why, this whole locality is full of lead. No wonder it shines with a dull lustre."

They continued on, ever ascending the little slope that would bring them to the top of the encroaching ridges. When they did attain their objective, they stopped for a moment to search the surrounding landscape. Everywhere was a stark profusion of projecting pinnacles and razor-sharp spurs over which hung a brooding, melancholy silence. They could see a kilometer, but there was no sign of the strange madman. Nor any ship could they discern. Rogers looked quickly at Kraft, sensing a gathering emotional storm in his ominous silence. He had not spoken for several minutes. Suddenly the big man turned on him.

"What're we going to do if we don't find that ship, captain? God, I don't want to die out here in space on this damned barren rock!" he cried out with a break in his voice, "I want to get home to Earth; I want to dig my hands into soft mud, and run bareheaded in the wind and rain. I want to hear noises of the city streets and see crowds of people. I don't want to die out here, honest!" Kraft had sunk to his knees in utter hysteria, tears streaming down his face.

Rogers pulled him to his feet roughly.

"For God's sake, man, pull yourself together!" he pleaded, "don't you think I want to do the same things, too? Come on with you."

For awhile they continued on over the gnarled terrain, talking superficially of the peculiar formations they were passing, but uppermost in the minds of both was a wild desire to find some sign of a ship. Rogers kept his self control with difficulty. Oh, if he only dared give way to his compulsion—to roll on the ground and pound it with his fists, to shout and yell; anything to release his dammed-up emotions! But he mustn't. That way led to break down. Perhaps it had driven the mysterious stranger insane. He had to watch himself, if only to be an example for Kraft.

"Well, look at that red strata!" exclaimed Kraft in surprise. It was the first show of color they had found.

"Looks like—yes, it is! Cinnabar!" cried the captain, glad of something new to divert his mind. He poked it with his rod. Big reddish brown crystals came to light. "This boulder in space seems to be nothing but a ball of valuable metals, Kraft. You see that grayish-silvery stuff over there? That's platinum ore, mixed with iron and silver."

"A lot of good it does us now!" the bulky spaceman answered gloomily.

Rogers pointed his rod at a high, conic pinnacle to divert the other's attention from himself. "Let's take a look from there."

CHAPTER II

The Log of Disaster

CAUTIOUSLY, they picked a path through the sharp rocks and ledges, threading their laborious way to the peak. The last obstacle was a jump of several meters to the top of the cone. This they accomplished with little difficulty. After making sure of their footing on the insecure slant of the ledge, they once again turned to survey a wider view of the dismal expanse afforded by the lofty pinnacle. Rogers searched the region keenly, mentally dividing it into lateral strips, and examining each strip minutely farther and farther out to the horizon. Acre upon acre of jagged scenery spread before him like some nightmare of hell. Maybe they were travelling in the wrong direction. And maybe, a small voice seemed to suggest in spite of his attempt not to listen, there wasn't any ship of space. Yet where did their insane attacker come from?

Suddenly, Kraft cried out excitedly, and all but started to sink rapidly to the ground. He caught himself. "Look, captain, what's that over there?" he shouted aloud, pointing toward a big ledge. Something rounded and smooth lay below and partly under it. Rogers squinted to focus his eyes sharply.

"Pluto! It's a ship, Kraft, it's a ship! I can see seven

port holes on the side," cried the captain eagerly. "The sun's glinting on them. Come on, let's get over there, man!"

And in the next moment he took a leap from the pinnacle, coming down into the midst of a pile of rocks. Kraft followed him, and together they hurried as fast as their long strides could safely take them over the rough ground. Halfway there a doubt entered the Captain's mind. What if the ship were a hopeless derelict like the *Mercedes?* What if some terrible scurvy plague had taken all the crew? They could never hope, then, to navigate the ship through space. With a muttered curse he checked his pessimism. Better to hope for the best.

Coming over a gentle slope they got a good view of the ship lying at the bottom. Rogers exulted, as he glanced over it. At least the hull was intact, and in excellent condition. Perhaps they could escape now. Earth! Green trees—fragrant winds—noises—people—their kind! And then Rogers stopped. A strained, grim look displaced the eager expression of expectancy on his fine face. His blue eyes narrowed perceptibly behind the helmet port, as they darted quickly over the scene and then snapped back to rest on something that caused him to frown in grave concern. The still form of a man in a space suit lay on the coarse rubble near the open air lock of the ship.

"Wait a minute!" he warned Kraft, putting a hand out. "That man is dead, and there's no air in that ship—the air lock is wide open!"

For a moment they stood in shocked silence, searching the scene more closely. What mystery was this? Should they dare examine it?

"We'll never discover anything from here. Let's take a look," declared Rogers, starting down the slope.

The dead man lay on his back before the lock, but Rogers was not prepared for what he saw as he leaned down to look into the man's helmet. He recoiled in sickening disgust. A dirty brown skull with sagging jaw occupied the globe. He turned to the open door of the lock, and glanced inside. More metal clad bodies sprawled on the floor in there. Perhaps been there for a long time, too, to waste away to mere skeletons, for something told him the space armor inside held gruesome vestiges of what had once been living men. Overcoming their horror they entered the ship. Ten bodies were strewn over the floor. There was no sign of violence. Everything about the ship was in order, even the rocket firing chambers were all charged. They could find no excuse for disaster. It was a profound mystery.

"Shooting stars! What do you suppose they all died from?" exclaimed Kraft bewildered. "Scurvy?"

"Whatever it was it left one of them crazy," returned the captain. He went into the navigation room, and dug around among books and papers, bringing out the log of the ship. Together they read the entries. Apparently it was a scientific expedition that had set out secretly from Earth, bound for the asteroid belt. Rogers's pulse quickened as he came upon the entry:

"Oct. 12 E.T. The expedition so far has been fortunate. Simmons and Lee claim they have proof that this asteroid is the largest remaining chunk of the core of what once was a planet. They have found many of the heavy metals such as mercury, platinum, and lead to support their theory of these metals sinking to the core of a molten planet to solidify in the passing eons. At least the expedition has proved financially successful for the planetoid seems to be a vast ball of valuable metals that can be mined with little difficulty.

"Later: A terrible thing has happened! Simmons and Lee were exploring a deep crack today and had the whole crew to bring back samples. Lee says they came upon a broad seam of uranium so rich in content that even then the emanations distressed them. They got out as fast as they could, but everyone was burned.

"Oct. 13th. E.T. Yes, we've discovered the core of the unknown planet, as we set out to do, but it has cost all of us our lives. The men are dying one after the other. It's horrible to see the skin slough off them and hear them scream. The poor devils are trying to protect me from them by staying in their suits, but it's done no good. I think I've contracted a slow poisoning. The pain is driving me mad. I dare not set out for Earth yet. Maybe I'm mad now! How do I know?"

SEVERAL entries followed, but they were manifestly the ravings of a madman.

"A horrible end!" grimaced Rogers, closing the book, and looking around the luxurious cabin.

"How we going to get them out of here?" questioned Kraft, "we better not touch them—might get the same poisoning the captain did."

"Find a pair of tongs so we can drag them out," the Captain ordered anxious to get the ghastly work done. "I'll get the auxiliary air tubes ready so we can have fresh air as soon as we clean this ship up."

But when he went to the tanks, every one of the pressure dials registered zero. The luckless captain had lived in the death ship as long as his air had held out. No wonder he had gone insane, Rogers thought to himself, turning away. They would have to go back to the *Mercedes* and get their tanks—barely enough to last them to Earth, for Mars was on the far side of the sun.

Gingerly they dragged the metal shrouds and their gruesome contents outside and over a ridge out of sight of the ship. That unpleasant duty finished, they set out for the *Mercedes*, travelling by familiar pinnacle landmarks.

"I wonder what happened to the captain after he hammered our porthole in?" mused Kraft, looking at every deep shadow suspiciously.

"Poor devil probably went off and died among the rocks somewhere," opined Rogers, taking a long hop to clear a spiked spur of strata.

Kraft reached up and turned on more air flow from his tank. The exertion of their long strides which they kept up now was taking more oxygen than usual.

"Look at our long shadows!" the spaceman exclaimed in startled surprise, as if having just become conscious of them for the first time. "Sun's getting pretty low."

Captain Rogers paused to take a measuring glance at the sun's altitude above the horizon.

"She's getting pretty low all right, not much more than a half hour of daylight left. We've got to hurry; when the sun sets, it's night-time immediately—no twilight; and if that happens, then we're lost!"

The discovery of their plight lent new energy to their tiring legs. Like elongated fragments of meteors they fled through space over the jagged ground in great leaps. They were just gaining the head of their familiar ravine when Kraft pointed into the heavens in alarm.

"Look!" he shouted, so loudly that his powerful voice hurt Rogers' ears.

Beyond them and in line with the ravine was a massive

fragment of rock rushing headlong at them directly on a tangent. It was swirling slowly in its majestic flight. However, they had misjudged its altitude.

"God, it's going to smash into the *Meroedes*, Kraft!" Rogers sobbed aloud, "there goes our air—our very lives!"

The great rock struck squarely with the momentum of many tons, breaking the ship's back and tossing it up the ravine toward them some distance. Compartment sections of the ship were rent wide, spewing forth machinery, tubing, and many bodies of the dead crew in a violent hodgepodge of disorder. It was a soundless impact, and yet both men felt it in the trembling of the ground.

For awhile their own lives were in danger from the big fragments of rock catapulted in their direction from the force of the impact. But as soon as it was safe, they covered the distance to the ship in enormous leaps and bounds. All restraint was gone now that their very existence was a matter of minutes. Were the air tanks smashed? That was all that mattered now. The almost certainty that they were, and the inevitable fate that would overtake them in less than an hour, stamped upon their faces a frantic and desperate fear.

Rogers propelled himself through space in mighty leaps that only a desperately frightened man could make. Why did they have to be cheated at this last moment with their lives in their very hands? He didn't want to die. Kraft was right; if only they could get back to green Earth and see people and hear the roar of city traffic! God, for just a little air!

They reached the scattered debris of the ship lying on her side, and immediately went in search of the oxygen chamber with pounding hearts, avoiding the ghastly-looking bodies of their dead companions. Up they climbed through twisted steel ribs and torn hull plates to the top of the ship. It was an utter wreck. How anything could have survived such an enormous crash was a mystery. Rogers eventually found what had been the air lock, and was barely able to squeeze into the devastated room. Kraft waited on top nervously to hear the report that would condemn them to a frightful death or else release them from this hellish barren world.

"Well?" he muttered questioningly, when he could no longer stand the suspense. He could feel the vibrations of clanging metal through his metallic suit, as Rogers moved about hurriedly below. A moment's silence passed.

"Kraft, they're not here!" exclaimed Rogers in a startled voice.

"Maybe they're smashed up so bad you can't recognize 'em," offered Kraft dejectedly.

"There's not a thing down here that remotely resembles a collapsed tank. They must have been thrown out when the ship rolled over." And the captain abandoned his search in the wreckage of the compartment, picking his way carefully up through the wrenched girders and circular steel ribs. He poked his head up through the opening. Kraft had already dropped to the ground, and was searching madly between the boulders and scattered wreckage for the tanks. He too joined the search, but a black despair began to settle upon him as they covered the ground quickly with no results.

SUDDENLY the possibility that the tanks might have been tossed over the ridge in the crash lent new hope. Up, up the spikelike slope he bounded, hoping against hope that there might be something to his sanguine idea. At the tip of the ridge he was climbing a ledge to get a fair view of the farther slope where the tanks might have rolled, when a faint flash of light attracted his attention from the direction of the horizon. Maybe only a falling meteor. Again it flashed. He gave it his whole attention this time, looking closely at the colorless landscape. There, something moved! It was someone in space suit, no mistaking what his eyes saw this time. Someone dragging a large object, like four thick tubes fastened together.

"Kraft!" he yelled fiercely, turning to find the big spaceman darting in and out of black shadows down in the ravine. "There he goes—the crazy captain—he's got the tubes!"

And he pointed in the general direction of the retreating madman. Kraft extricated himself from a mass of crumpled beams and plates, and crouching low for a moment swung his arms hard in a powerful leap that launched him half way up to the ridge. In another mighty attempt his great muscular strength landed him at the top. Rogers was already in pursuit of the man. The more powerful Kraft, taking longer leaps, caught up with him quickly.

"Now I know why he broke our port—thought we'd die and he could then take our air tanks. Well, we can thank him for saving them all right, before the meteor struck, if we can only get them back," said the captain with labored breath, "he's insane all right enough—insane with the cunning of a fox!"

"We got to head him off from the ship then!" cried the spaceman, lengthening his leaps.

In his mad haste to cover more and more ground, Rogers suddenly found himself coming down between two big boulders, and no amount of frantic twisting and awkward hitching about in mid-space would alter his course. He became wedged in fast. Kraft came back quickly.

"Go on, Kraft, I'll get out of this," ordered the captain, pulling and twisting savagely to get free. Farther and farther away their quarry was retreating, occasionally reflecting the long rays of the fast declining sun on his suit. Black night would soon descend with terrible suddenness.

"It's sure death for you, captain, if you don't get out of here. Night will be here soon, and I'd never find you. Here, let me grab you about the chest." And he grasped the smaller man under the arm pits, working him around so that his feet finally slipped loose from the wedge of the rocks. Free!

Again they started in pursuit, leaping over small ravines that ran in criss-cross patterns, avoiding huge jagged boulders, lying where they had cut deep gashes in the iron-clad terrain—ever onward. It was a telling pace to make up for lost distance. Rogers drove himself on grimly, though he suffered from lack of an increase in oxygen supply to meet the added strain. How his lungs hurt, and his legs where he'd twisted them between the rocks! A short run, a super effort that took all his strength, and he was lunging through space, watching the treacherous, rocky ground glide by and then come up to meet him. They were gaining rapidly on the man ahead because of his slower pace. However, it began to be doubtful whether they could overtake him before he reached the ship which now was in view a kilometer distant.

"Head him off, Kraft, head him off!" cried Rogers in warning. Kraft kept up his terrific pace, leaving his superior behind.

By now the fleeing madman was fully aware of hot pursuit. He redoubled his efforts, but the awkwardness of

transporting four high pressure air tubes all bound together with steel straps caused him no little difficulty when he tried to lengthen his modest hops. Even though Kraft had circled around from the side it was quite evident he was not going to get there in time. As he came down at the end of one of his powerful strides, he halted instead of starting another leap. In amazement Rogers, still flying over the ground, saw him stoop and grasp a large chunk of heavy ore.

With a mighty heave he threw the massive missile at the fugitive, at the same time scooping up a number of smaller rocks. Another great bound into space and he was throwing his primitive ammunition at the other as he hurtled over the tops of small rocky hillocks. When the fleeing man saw the big fragment of rock rushing toward him like a meteor, he stopped in the middle of taking a frantic leap. There was nothing he could do but take an awkward jump backward. And when the rest of the missiles followed in quick succession, he suddenly discovered that the two men were closing in on him from the rear and side. Kraft's strategy had foiled him, and by now the giant form of the spaceman was bearing down on him. In a last desperate attempt he made a great leap toward the ship, but the air tanks were too much for him. Kraft cut him off in front. The man looked wildly about in indecision. Rogers was coming rapidly over the rough ground from behind, and Kraft was advancing toward him menacingly from the front. To his left opened a small ravine cutting between two pinnacles some distance from the ship. Suddenly he turned, and both Rogers and Kraft heard his insane laugh in their radiophones as he dashed headlong down the rough, uneven floor of the ravine, dragging the bouncing tanks behind him.

CHAPTER III

The Race with Death

ASTOUNDED, both pursuers followed him at a pace that would soon overtake him, stumbling down the little ravine that soon grew into a small gorge between the pinnacles. Suddenly he stopped and faced the oncoming men. A jagged crack in the ground opened behind him.

"Ha, ha, now we all die!" he yelled madly, "air—that's what we're fighting for—air. But you won't get it. You'll die with me instead," he shouted savagely. Rogers could see the wild light in his eyes.

Before they reached him he shoved the tubes of air into the black abyss, emitting a chuckling cackle. "Get it, and be damned to you!" he cried derisively, "you'll get what's coming to you then!"

"Don't go down there, Kraft," warned Rogers in sudden realization, "that's the cave of radium!"

But the big spaceman continued on without a moment's hesitation, selecting a firm foothold on the side of the crack, and descended into the black shadow. Rogers watched him disappear as he would a condemned man. Kraft was sealing his own doom.

A loud curse from the madman who had backed off to the side of the small canyon brought Rogers aware of his presence again. He looked up from the crack to see the man preparing to hurl a huge rock into the black depths below. With a tremendous drive he launched himself at the man. Before the other could release the big rock, he struck him a glancing blow in the body, spoiling his aim. It dropped harmlessly to the ground. Together the two rolled over and over on the rough floor of the gorge perilously near the sharp drop-off of the crack. The man somehow got hold of a rock, and was beating a tatoo on Rogers' armor, attempting to puncture it. The captain made a desperate attempt to pin his arms down during one of the brief intervals he was on top, but the bulky arms were too hard to handle.

If that mad devil should strike a helmet port, thought Rogers in a confusion of whirling fear. He cursed at the futility of fighting encased in steel armor. If only he could get his bare hands on the man's hot, pulsing throat, he'd soon choke all sign of fight out of him! Suddenly, his heart was pounding madly, frightfully in his ears and temples, as the other worked him over to the edge of the precipice and all but succeeded in pushing him over. But a frantic wriggle of his body gave Rogers a new lease on life, and as he crawled away from the edge of death, he shoved the madman away from him violently with both feet. He flew through space helpless to stop himself for the moment. Heavily, he struck with his back against a jagged ledge protruding from the wall of the canyon. Rogers heard him give a sobbing gasp above the sound of a great hissing. He never got up. The rock had broken the air line from his oxygen tank on his back. "Poor devil," was all Rogers could think.

Suddenly all thoughts of his battle for life fled in the discovery of a greater danger hovering above them. A large asteroid some ten kilometers in diameter whirled in the black heavens overhead, growing perceptibly larger. Inevitably, it would collide with their planetoid world! For a moment he stood gazing at it in growing panic. Then he found his voice.

"Kraft!" It was a cry of terror.

"I've found them, captain, I'm just about up to the top now," came the other's matter-of-fact answer.

"For God's sake, man, hurry, an asteroid is going to smash into us. We've got to make ship and break ground before it strikes!"

Kraft's big head globe and bulging shoulders appeared above the sharp line of the crack. He boosted the tanks out on the ground, and then followed them himself. In the next moment, even as Rogers was in the act of pointing frantically at the momentarily growing world above them, Kraft was blotted out. Everything was blotted out in deepest night. The sun had set.

An involuntary groan of despair escaped from Rogers. Lost! How could they ever find the ship in absolute darkness? Perhaps this was the end that fate had saved for them. No unknown merciful visitation of death for them. Groping about in the dark, the imminent doom from above would send them through a thousand horrible deaths before it actually struck.

"Give me your hand, captain, so we don't get lost," came Kraft's voice. There was a strange calmness about it that found an odd answering feeling of sympathy in Rogers. Wonder how he felt after exposure to the radium? Perhaps it wasn't in just this spot after all that the explorers had found the uranium seam.

"How do you feel, Kraft? Any ill effects?"

"No. I'm all right." Kraft's groping fingers struck Rogers, and immediately they clasped hands tightly. "I think it's in this direction that we came. All we can do is try, I guess."

And together they started groping their way along the rocky ground stumbling over sharp projections, stepping unexpectedly into holes, and running head-on into pinnacles and sharp ledges that rose sheer from the ground. And ever at their backs swung the celestial menace, growing always larger, yet too dim so far to give them any appreciable light.

"Suppose we're going right?" asked Rogers after several minutes of hasty flight over the jagged ground. He could feel the vibrations of the air tanks through Kraft's hand as he dragged them over the rocks.

"It seems to me we're going upgrade a little all the time, and that's what we want," returned Kraft hopefully.

"We ought to be at the head of the ravine by now. Let's take a search to the right here, and locate ourselves if we can," suggested Rogers.

Hand in hand they stumbled over the ground where should have been a sloping side of the ravine. After several moments, Rogers cursed sharply.

"Damn me, Kraft, we're lost!" he cried desperately. He looked over his shoulder. A great dull disc hung in the black sky there, bigger by far than the last time he had looked. "We aren't in the ravine now. This is all flat, open ground here. We must have taken that small ravine that joins the larger one; I remember it now, when we chased him down to the crack. That puts us 'way over to the right of the ship. We've got to turn around in that direction but, then, what's the use, man, we'll never find it in time!" Despair crept into his voice.

"All we can do is keep trying to the last," was Kraft's calm, toneless reply.

THEY turned around and started off blindly in what was the general direction of the ship. But in their path farther on they came upon a great number of big boulders. Rogers swore roundly, as their way sloped upward steeply.

"Let's go round it, Kraft, must be a steep hillock."

But the way around the base proved to be too difficult.

"It's too hard going, captain," ventured Kraft at last, breathing heavily, "might as well try going right over the top."

Leading the way up, Rogers picked his footing quickly yet carefully, warning the big spaceman behind. Weaving their way in and around huge rocks that loomed up at close range like stalking phantoms, they toiled to the top of the cone. As they came out on a level spot, Rogers gave a startled cry.

"Look at that!"

Kraft looked off into the darkness a moment, and then exclaimed in surprise. Some distance away and below them glowed the hull of the ship as though coated with phosphorous. Hurriedly, they descended the slope, stumbling, and sprawling over unseen objects; but always in front of them glowed the hull of the ship, beckoning them on like a welcoming beacon in the night.

"What's causing it to shine like that?" puffed Kraft, as they strode forward in the dark uncertainty of the rough, uneven ground.

"There must be pitchblend in that ledge near the ship, and it's causing the zinc content of the steelite hull to glow like a spinthariscope," explained Rogers. "It certainly has saved our lives."

He took another nervous, hasty glance over his shoulder at the menacing asteroid. Getting pretty close now. May be crash in a quarter of an hour. Just time enough to escape. How his muscles ached all over his body, and especially his shoulders where the metal armor rubbed! It would be a relief to get the cumbersome thing off once inside the ship. He looked over his shoulder again. That whirling planetoid up there filled him with constant dread. They had time enough, all right, nevertheless—

"We've got to hurry or be—," Kraft heard the captain begin. Suddenly he pitched forward, tearing his hand out of Kraft's strong grip.

The spaceman, still on his feet, heard a peculiar hissing in his radiophone quite unlike the steady air flow from an oxygen tank.

"Kraft! It's cracked," came Rogers' startled cry, "I can feel the air going out past my face in a draft. It's . . . it's making my ears roar. Where are you? Can't hear you, old man—guess I'm done in . . . everything is going."

A thrill of horror gripped Kraft in a momentary panic, as he bent down to the fallen man. A crack in his glass port! It meant death for his superior, his only living companion in this hellish world. He checked his fright. No time to waste. There was still a chance. Stooping, he felt around until he found the oxygen valve, and turned it on full. Then he grabbed Rogers' limp body firmly under a shoulder, and started for the ship as rapidly as he could, dragging the high pressure tubes with his free hand. But just as Kraft was nearing the ship, his towering form, a massive bulk of brawn, began to act strangely.

For the first time in his terrific pace he faltered, as if coughing violently. His giant form outlined against the phosphorescent glow of the ship lurched and staggered.

Quickly he straightened up, as if throwing off an insidiously working lethargy. He took a hasty look into the sky, and then lunged down the little slope to the ship with renewed energy. It glowed with a steady light like some ghostly visitor. At the airlock he faltered a moment, and then plunged into the black hole. Inside, he laid Rogers down gently and the tubes beside him. Air was the terribly important thing now.

Blindly he groped around in the pitch-black room, fumbling for the controls of the airlock doors. There, he found them, and closed both outer and inner locks. Somewhere nearby should be the light switch, if he could only locate it. Searching with thick armor covered hands was a clumsy business at best. But a moment of terrifying doubt seized him. What if the giant Dewar-Hammerlingt batteries had frozen in their vacuum-sealed containers? They were heated by a slow current within the vacuum walls from their own cells, and yet it was possible they might—the lights snapped on with a heartening glow.

Hurriedly, he picked up the tanks of air, and dragged them to the supply rack, uncoupling a bank of four empties and replacing them with the four *Mercedes* high pressure air tubes. Next, he turned to a large cylindrical container that electrically heated the air flowing from the air tanks before passing into the room, and switched on the battery current to heat up the oxygen coils. While the chamber warmed, he coupled the four tanks into the line. Impatiently, he waited while an electrical thermometer climbed slowly on the chamber. Just before it reached the minimum heat required to function, he opened the valves wide on the tanks, and then switched on the

(*Concluded on page* 181)

THE TIME CONQUEROR

By **L. A. Eshbach**

(Illustration by Paul)

Kozarek shrank back. Fear of the brain was upon him again. For the brain was a thing of tremendous power and he was afraid of that power.

THE TIME CONQUEROR

THE room was dingy beyond description, its furnishings wretched and poverty-stricken. The stream of white moonlight pouring through a wide rent in the dilapidated roller shade that covered the one small window, served to accentuate the miserly character of the place, rather than to decrease its squalor. It did not illuminate the room, however; it but lessened the degree of darkness, giving a dim, shadowy outline to the furnishings.

There was a bed along one side, its covers dirty and unkempt; a small, rickety table stood beside the bed, its top littered with odds and ends, conspicuous among which was a grimy hypodermic syringe. A disabled chair sagged perilously against the wall opposite the bed, and a miserable washstand stood in a far corner. That was all, save for the greasy, threadbare, pitiful rag of a carpet that strove ineffectually to conceal the rough boards of the floor.

The room was tenantless—and silent.

Suddenly there came a faint, creaking noise outside the door. Someone was stealthily mounting the stairs. A muffled step in the hallway, the doorknob turning softly, and with a faint, protesting squeak of rusty hinges, the door swung open—and shut again.

For a wavering second the moonlight rested on the face of the intruder; and at that instant the white rays were cut off by a cloud—though it almost seemed that they fled in fear of the abhorrent ugliness of the man!

His was a face that might have been seen in a nightmare, a face of infinite and cruel power, yet one that was cloaked with a harsh, mocking cynicism. Roughly formed, it was, like a half-finished sketch or model of a head; a face like the Sphynx, its features stern and rugged, as though worn by the grinding sands of ages of desert winds.

Starting from the mass of close-cropped black hair, his forehead, broad and high, slanted down at a sharp angle, forming two bony protuberances just above the eyes. Those eyes, pale blue and heartlessly cold, were sunken deep behind a high ridge that ran around the eye-socket. His cheek-bones were prominent and square-cut; his cheeks inclined to be hollow until they bulged abruptly out in a massively-built jaw that thrust itself well beyond the upper lip.

His mouth was thin-lipped and wide, and it drooped sharply at the corners in an expression of cruel mockery. And his nose, large and aquiline, fell away from the forehead in a straight line, depressing suddenly at the tip—like a vulture's beak. Considered as a whole, his face was a picture of grim relentlessness.

Only for a few moments did the cloud cut off the moonlight; suddenly the white radiance again poured through the rent in the shade. It revealed a dark, motionless figure crouching in the blackness of the most poorly-lighted corner.

Slowly the minutes dragged by. Through the night drifted a medley of faint sounds, an indefinable conglomeration of noises; yet, paradoxically, the silence in the room seemed to deepen. And so motionless was the man in the corner, that he seemed to become a part of the shadows that concealed him.

Suddenly he stiffened. A door had banged shut on the floor below. Now someone was ascending the stairs—with the slow, weak, shuffling tread of the infirm or aged. The approaching man coughed in a wheezing, asthmatic way as he moved along the hall, finally pausing before the door of the squalid room. He thrust it open and shuffled in.

There came the scraping of a match against the wall; and with an angry sputter a diminutive gas-jet flared into life. Blinking in its sickly, yellow light, the newcomer slowly crossed the room to the rickety table. His eyes, gleaming out of deep, black sockets, set in a gaunt, pallid, hollow-cheeked face, were fixed hungrily on the hypodermic syringe. Grasping the instrument eagerly, he thrust back the sleeve of his threadbare, ill-fitting coat, his frayed, dirty wrist-band, and pricked his flesh with the point of the needle.

At that instant a harsh, mirthless laugh cut through the room; the hypodermic clattered to the floor; and the little man whirled. Circling his lips with the tip of his tongue nervously, his eyes roved around the room in a furtive, terror-stricken glance—and in an instant were fixed on the

L. A. ESHBACH

IN this novelette the idea of time, as a closed circle of events is most dramatically portrayed. We have read in the Bible, that "the sins of the father will be visited upon the children." Modern biologists tell us that hereditary characteristics for good or evil are passed on from generation to generation. Now students of the history of the race tell us that people of the distant future will be happy or will suffer depending upon what we of today do.

Mr. Eshbach projects us from the present into the far future to see the working out of great destinies. Under the all powerful domination of the brain, his story moves swiftly and fiercely toward its destined end. The human race is capable of many queer transformations, but none queerer than those our author has so vividly pictured.

ugly face of the man in the corner.

"You—you—Koszarek!" he snarled, his lips twitching, a gleam of utter hatred leaping into his eyes.

"Yes, *Dr.* Ovington, 'tis Leo Koszarek." The even voice of the other was devoid of expression. "I see you are still a slave to cocaine!"

"Curse you, yes!" the little man shrieked wildly. "And you know damned well why I'm a slave of the drug! You're responsible for it all, you devil's spawn!" His voice was rising in a shrill falsetto. "You stole the fruits of my brain; you held me prisoner and forced drugs on me until I had to have them; you were the cause of my becoming a pariah, an outcast—you—you!" His tirade ended in an inarticulate shriek; then a sudden paroxysm of coughing seized him.

LEO KOSZAREK, M.D., Ph.D., watched the wreck of a human being before him, smiling contemptuously. When the coughing had ended, he asked in mocking tones:

"Well, have you said all you want to say?"

"No, by God!" Ovington shrilled. "No, you—" and a stream of foul invectives flowed from his lips.

"Enough of that!" Koszarek snarled, darting across the room. "I don't want the neighborhood aroused; it might prove embarrassing." He caught the little man roughly by his shoulder and pushed him violently to a seat on the bed. "Stay there, and shut up!"

Completely cowed, Ovington shrank back.

Koszarek stood over him in a menacing attitude; and there was an ugly light in his pale-blue eyes when he spoke.

"What you say is true. I *did* take your discovery away from you—but since you weren't capable of protecting it, you didn't deserve to receive the credit. After all, I made better use of your discovery than you could possibly have done.

"But I didn't come here tonight to resurrect ancient history; I have some business to transact. I need a trained observer as an assistant in an experiment I am about to conduct—the most important one of my career. And you, Ovington, are just the type of man I need!"

"I!" the other exclaimed uncomprehendingly.

"Yes, Ovington, you." Koszarek's voice sank to a soft purr. "You are to be singularly honored. I need the brain of someone who has been trained in the sciences, someone who has the ability to interpret and record with mathematical exactness all that he sees—and you fit the requirements better than anyone else I know."

"You—you ask *me* to assist *you!*" Ovington choked. "I'll see you—see you in Hell first! Get out! Get out I say! You have no right to be here; I want you to leave! You—you heartless brute!"

"Enough of this nonsense," Koszarek growled impatiently. "You'll help me, though you've no desire to do so." He stooped over and suddenly held up the hypodermic syringe. "Suppose I'd make it impossible for you to secure any of this stuff! Suppose I'd exert a little influence in certain quarters, and have you sentenced to prison—where the cocaine would not be available! Then what would you do?"

Ovington seemed paralyzed for an instant; then he sprang to his feet. His eyes were fixed on Koszarek in a glassy stare of deprecating horror.

"Not—not that! God! not that! It—it would kill me! I must have it—I can't do without it! . . . I'll help you." He sank back on the bed, trembling violently.

"I thought you would." Koszarek's drooping mouth widened in a thin smile. "Shall we go?"

Ovington nodded uncertainly, helplessly. He arose then, and with his customary, weak, faltering stride, moved toward the door. Koszarek held it open for him; and after turning out the light, he followed him through the hallway, down the stairs, and out into the street.

A big, high-powered car was parked about a half square away. Koszarek led the way to this, and at his direction Ovington seated himself in the front seat. Getting in beside him, Koszarek drew a flat black case from an inside pocket. He opened it and revealed a hypodermic syringe.

"Here," he said, "you'll need this. It contains a heavier dose of cocaine than you've had in a long time—and it's sanitary."

Ovington looked at the instrument doubtfully, a suspicious gleam in his eyes.

Koszarek shook his head impatiently. "Come, take it; it contains nothing but cocaine. If I wanted to drug you with anything else, I'd do so myself. You needn't fear; I want you to remain conscious and to have your mind as alert as it may possibly be."

Eagerly then Ovington seized the hypodermic, and baring his arm sent the drug into his bloodstream. A change came over him almost instantly. His eyes brightened; his nerves grew steady; he squared his shoulders in sudden animation.

"I needed that badly," he exclaimed. "I feel better than I've felt for quite a few months." Furtively he dropped the hypodermic into a pocket of his ragged coat. A ghost of a mocking smile wreathed Koszarek's lips for an instant; then it was gone.

"I knew it would clear your wind," he remarked as he started the motor. "And I wanted your brain clear so we could discuss my experiment."

For ten or fifteen minutes they drove through the city in silence. They reached the suburbs, sped into the open country. It was only then that Koszarek renewed the conversation.

"Ovington," he began abruptly, "what is your conception of time?"

"My conception of time?" the other asked wonderingly.

"Yes; what is time?"

"Why—I—time is—is—" Ovington paused in surprise. "By Jove, I don't believe I have any conception of what time is. I've never given it thought."

KOSZAREK nodded. "Few people have. I'll tell you. Listen carefully. Time is the distance separating events in the order of their succession, and binding them in different wholes or units. You may not comprehend all that lies in that definition, but don't question it; it is correct!"

"Another question: what do you think about the past and future? Do they exist, or are they non-existent?"

"Non-existent, of course," Ovington replied promptly. "I have no belief whatever in the pseudo-scientific idea of the past and future existing along with the present, so that we may travel from one to the other!"

Koszarek nodded a second time. "The popular belief—

but it's entirely wrong. Here! You think, I suppose, that the past already does not exist because it has passed, disappeared, transformed itself into something else. And you think the future also does not exist. *As yet;* it has not arrived, has not formed. Is that correct?"

"Yes!" Ovington exclaimed. "Exactly."

"And by the present," Kozarek continued, "we mean the moment of transition of the future into the past. For that moment only does a phenomenon exist for us in reality; before, it existed in potentiality; afterward, it will exist in remembrance."

Again Ovington acquiesced.

"Then according to that, the present is the moment of transition of a phenomenon from one non-existence to another non-existence—since you say the future and past do not exist. But that short moment that we term the present is after all fictional in character; it cannot be measured. We can never seize it. That which we did seize is always the past! So, according to your own conception of time, Ovington, neither past, present nor future exists!"

"But that's absurd!" Ovington objected. "You and I exist, and the world exists—and all in the present."

"Of course. And that proves the falsity of the popular conception of the so-called divisions of time. The world, according to that idea, would appear to be a perpetual bursting forth of sparks from an igneous fountain, each spark flashing for an immeasurable instant, then disappearing, never to return. This operation goes on endlessly, there are an infinite number of sparks, which together produce the impression of flame—yet in reality they do not exist!

"The future does not exist now, they say, but it *will exist!* But how can that appear which has no existence? The past and future cannot be non-existent, for if they do not exist, then neither does the present exist. All three must exist somewhere together—but our finite senses cannot detect them."

For a silent moment Ovington frowned thoughtfully, then exclaimed:

"Your argument seems sound—but I can't say that I'm entirely convinced. However, conceding for the sake of argument that you are correct, to what does it all lead? What is your reason for mentioning it?"

"Simply this—the experiment in which you are going to assist me, will be an attempt to prove the existence of a fourth dimension, and to see both the past and the future! Don't misconstrue my statement; I haven't invented any fantastic time-traveling machine or any absurd contraption of a similar nature. I merely desire to prove by a certain means that I have in mind, that there is a fourth dimension, that it is time, and that both the past and future are accessible to the human mind."

"I know that in certain of their calculations," Ovington commented slowly, "mathematicians are employing four mutually interchangeable coordinates, three of space and one of time. They use time as a dimension of space—but there it's purely a mathematical conception."

"I am aware of that, of course," Kozarek agreed, "but I am going to prove that it has an existence outside of mathematics."

They were silent then, each busy with his thoughts, while the big car bore them through the night. Ovington strove mightily to digest all that he had heard; and Kozarek marshalled his thoughts to present other arguments. Ovington's mind had to be prepared for the task that he had planned for it.

As before, Kozarek broke the silence.

"Has it dawned upon you, Ovington, that we never really see anything? We live groping about like blind men, only conscious of the small, finite sphere made known to us through our senses. And those five organs of sense are actually only feelers! We are constantly feeling our way through life. We never really see, for if we could see, we would be conscious of the existence of the fourth dimension of which we are a part.

"Really, Ovington, our senses are a joke! We say we see, feel, or in some way sense the material universe—yet we are conscious of only three dimensions! Space is infinite, is it not? It possesses an infinite extension in all directions. Yet for some strange reason we can measure it only in three directions—length, breadth and height. But the universe, all creation, is infinite—and therefore must possess infinity in all directions and in all possible relations. So in space there must be an infinite number of dimensions—or an infinite number of lines perpendicular to each other. Is that clear?"

CHAPTER II

Ovington Revolts

THE usually pallid face of Ovington was flushed with excitement as he nodded. "It's clear enough—but it's revolutionary! A fourth, or even a fifth and sixth dimension in mathematics—yes. But an infinite number of dimensions! It doesn't seem possible . . . Surely you do not expect to penetrate into those dimensions!"

There was a regretful note in Kozarek's voice when he answered. "No; I'm afraid the fourth dimension is about as far as man can go. But there, at least in mind, he can go! And you and I are going to prove that this is so."

With a triumphant smile on his ugly face, Kozarek completed his dissertation.

Ovington shook his head somewhat dazedly. The effects of the cocaine were becoming less evident; his mind was sinking back into its habitual lethargic state. With an effort he roused himself.

"I've read of attempts being made before this to unite the idea of the fourth dimension with time, but—"

"But," Kozarek interrupted, "in those theories there was always brought forth the thought of some spatial element existing in time, and with it, motion upon that space. Such an idea is fundamentally wrong, for motion cannot proceed outside of time, nor does time possess a three-dimensional space through which man can travel. Since the majority of those theories demand a *new* time, a time apart from motion, a three-dimensional time, they explain nothing. Pseudo-scientific drivel—that's what they are!

"But here we are at my experimental laboratory, my home. In a short while you'll learn how very important a part you'll play in my experiment with the fourth dimension—my conquest of time!"

They had halted before a gloomy stone building that loomed against a skyline of ghostly sycamores like an

ugly, forbidding thing. Somehow it seemed to reflect the repellent personality of the man whose dwelling it was. The building stood alone in a little hollow; no other habitation was in sight.

After they had alighted, John Ovington looked furtively around him and shivered. Hesitantly he turned toward Koszarek, standing in the glare of the headlight.

"Don't—don't you think I had better have another shot of cocaine? I need it—badly!" There was a plaintive, whining note in his voice.

Koszarek shook his head and frowned. "No! I think you've taken your last dose of the drug. After tonight you won't need it!"

Ovington shot a startled glance at the other.

"What do you mean? You—you—"

"Oh, I'm going to cure you! It'll be painless and very thorough." And his lips, strangely, twisted in a crooked smile. "Come, we have work to do tonight."

After extinguishing the headlights, Koszarek led the way through the darkness into the house. The lights clicked on; and they moved through the richly-furnished living quarters, up the stairs to the second floor—the laboratory.

Ovington stared in admiration around the completely-equipped laboratory—the tiled walls, the long white tables, the shelves upon shelves of bottled chemicals, the glass tubes, retorts, the surgical instruments—then he fixed his eyes on a strange device close at hand. It consisted of a long, rectangular, silver tank upon which rested a large, hollow, crystal globe, filled with a transparent, green-tinted liquid.

Four small, silver tubes led from the tank into the sphere on one side, broke to form a six-inch gap in the middle, and led out, down into the tank on the other side. At each end of the tank was a small, powerful pump which was likewise connected with the rectangular block. These were evidently driven by a small electric motor on a platform a few feet distant. An auxiliary motor stood beside it.

Ovington stepped toward the device to inspect it more closely—then suddenly he whirled at the sound of a key grating in the lock of the only door the laboratory possessed! His eyes dilated with sudden fear as he stared at Koszarek. The latter's deep-set eyelids were narrowed to mere slits, and his lips were curled in a faint, mocking smile.

Striving hard to keep his voice steady, Ovington asked slowly: "Why did you lock that door?"

"To prevent your leaving suddenly, of course," Koszarek replied coolly. "You might not find my experiment to your liking, and might wish to depart at the very beginning—and that would be most annoying! But don't let that trouble you. Sit down; we still have a few details to discuss."

UNCERTAINLY Ovington sank into the chair that the other proffered. There was a terrified look on his face, and the pallor of his sallow cheeks had increased perceptibly.

For a few moments Koszarek studied his prisoner thoughtfully; then abruptly his face assumed a semblance of cordiality. He arose from his chair.

"I think I had better give you another injection after all. One more dose can do no harm. Let me have my hypodermic."

Wordlessly Ovington returned the little instrument; and Koszarek turned and moved quickly across the laboratory.

The instant the other's face was averted, Ovington arose stealthily; and his fingers closed on a heavy metal weight that lay on a nearby table. His arm drew back, and with mad strength he hurled it at the retreating figure. Straight and true it sped toward its mark—until suddenly Koszarek, as though warned by some sixth sense, leaped sharply to one side. The missile flashed harmlessly over his shoulder to crash with destructive force into a row of bottles and jars.

With the crash, Koszarek spun around, his hands extended like talons. His eyes burned through narrowed lids like coals of fire; and his lips were drawn back over clenched teeth in a beast-like snarl. His face was pale with anger. He was a thing of monstrous, inhuman rage as he sprang toward Ovington.

Shrieking wildly, incoherently, the little man scrambled back, terror filling his brain with riot. But Koszarek was like a striking serpent; in an instant he caught Ovington's throat, and with the other fist, swung a brutal blow against his jaw. His body sagged; his mind became blank; consciousness left him.

When his senses returned he was bound firmly to a chair, his hands tied behind him. Koszarek was seated directly opposite him, eyeing him balefully.

"I hope you're satisfied now," he said in a harsh voice. "It had been my intention to be merciful and spare you the knowledge of what I am going to do to you—but now you'll know everything. I told you that you'll help me in spite of yourself—and now you can do nothing else.

"Why do you suppose I chose you to assist me—you, a hopeless drug addict? Why didn't I hire some one with greater knowledge than yours, some scientist in good standing? The answer is simple. I don't want *you*, I want your *brain!* I had to have someone with scientific training who would not be missed if he vanished suddenly! Someone who was valueless to organized society, whose body I could destroy with impunity. Your brain, that mass of grey matter in your skull, Ovington, is all I desire! And I'll have it!"

Ovington's face was a dreadful thing to behold. The skin had become a sickly yellow, stretched tight over protruding cheek bones. His brows were drawn far up, compressing his forehead into fine wrinkles. His eyes, dilated in a madness of fear, seemed to protrude from his head. And his mouth, half open, was set rigidly, with lips tensely compressed. But Koszarek ignored his fear and continued talking steadily. The little man heard him faintly, as though he were almost beyond the range of hearing.

"But what possible use could I have for your brain, Ovington; what connection is there between your brain and the fourth dimension? That question, too, can be answered; it forms the foundation of my experiment.

"We are in the fourth dimension, in time, are we not, Ovington? Yet we can sense only that which we call the present. Why? Simply because our five senses are not capable of detecting more than that. But how can we hope to enable our minds to go beyond the power of the

five senses? Ah, Ovington, that is the question—and the thought of our experiment for tonight. I believe that we need only deprive the mind of its five senses, keeping it alive during the process, and it will develop a sixth sense as a substitute for all the others, a sense that will be aware of the hyper-world!

"I'm certain, Ovington, that you've been in contact with blind men, and have observed what remarkable powers of touch and hearing are usually theirs. The law of compensation! And I'm certain that the same law will act as I've suggested, when all the senses are destroyed.

"The brain thus treated will be able to rise far above this slum of space, will be able to see far beyond the limits of the sphere enlightened by its usual consciousness. It will see the past and future, lying together and existing simultaneously!

"And you, Ovington—Ah! I see that you have guessed your part in my plans! Yours is the brain that will be deprived of its five sensory organs, and allowed to develop its sixth sense! You will make the sojourn into hyper-space—you, the most favored of mortals.

"I'll remove your brain from your skull, and keep it alive in the liquid in that hollow crystal globe. Incidently, don't you recognise that liquid? It's the serum you discovered, which, modified by your special process, prevents decay and death in animal tissue. The serum that, through use in surgery and medicine, has cut the death rate in half—and that gave me my fortune. I knew you'd recognise it."

SUDDENLY Ovington found his voice; and the pent-up hatred, the rampant terror in his mind burst from him in a stream of invectives.

"Yes, by God, I recognize it! And I curse you to the bottom of the blackest pit of Hell! First you rob me of my discovery, taking the honor and money for yourself; then, to discredit me if I talk, you make me a cocaine addict—and now you would take my life! Oh, that monsters like you should be created!" His voice broke in a choking sob; and he sank into a hunched-up mass in his chair, shivering and moaning and weeping.

"But you're mistaken, Ovington," said Koszarek in a voice that was mockingly solicitous. "I'm not going to kill you. Your body will die, it's true, but it's a worthless wreck anyway. But with its death your mind—ah, that will rise into a fulness of life that is infinitely superior to that of the body!"

He stepped over to the silver tank and crystal sphere. "Here, Ovington, is your future body. See," he pointed toward the silver tubes leading into the globe, "these will be connected with the arteries leading into your brain, and bear a liquid substitute for blood into all parts of the brain-substance. And these," indicating the other tubes, "lead back into the tank, where the various oxy-compounds of carbon, hydrogen, phosphorus, and the rest, that have been formed, as you know, by a process analogous to combustion are replaced by free oxygen, and the artificial blood is prepared for its return to the brain . . . Never fear, Ovington—I've taken every possible precaution to insure the success of my experiment.

"My only fear is that you will not be able to communicate with me—though for that I'm depending on the hope that together with your new four-dimensional sense, you'll develop the power to transmit your thoughts—mental telepathy. Of course, I can only hope that this is so. But I think I had better start the operation."

He moved toward the huddled figure of Ovington; then suddenly he paused and shrugged his shoulders. The little man was senseless. He had fainted.

With a faint, satisfied smile wreathing his lips, Koszarek turned away from the unconscious man and began preparing for the task before him. He moved a long, white, glass-topped operating table close to the tank and hollow globe, rolled the three tanks on wheels and the little curved cone that formed the anesthetizing apparatus to a position beside it, and placed the necessary surgical instruments in a tall, cylindrical sterilising cabinet. Then, freeing the senseless Ovington from the chair, he placed him on the table and began making him ready for the operation. His head had to be shaved and sterilized, and he had to be rendered unconscious by means of an anesthetic, then all would be ready.

Finally, clad in a long, white robe, his hands cleansed and sterile, Koszarek set to work. The brain of John Ovington was to be prepared for its conquest of hyper-space.

CHAPTER III

The Awakening of the Brain

DR. LEO KOSZAREK clenched his fists impotently and glared in helpless rage at the apparatus before him. The hollow crystal globe with its ghastly, grey-white occupant was the object of his wrath. Suddenly he seized a metal—the same that Ovington had thrown at him—and drew back his arm. He hesitated an instant—then dropped the weight and started pacing the floor like a caged lion.

"Damn!" he ground through his teeth. "Will it never speak?" His only answer was the steady, even throb, throb, throb of the pump that sent the artificial blood coursing through the brain that had been John Ovington's.

For eleven seemingly endless days that throbbing and the whirring of the motor had been the only sound to emanate from the contrivance. He had not been certain of success, of course; but somehow it didn't seem possible that he must accept failure. His arguments *had* been sound—though there was always the thought that the Brain might not be able to communicate with him even though it lived, and perceived the fourth dimension. Eleven days! If nothing occurred in the very near future he'd have to admit defeat. The body and clothes he had destroyed long ago; the Brain, apparently, would have to follow.

He paused in his pacing and stared at the globe again, as though by his staring he could wrest some thought from the imperturbable mass of grey matter. Steadily his eyes were fixed upon the thing—and abruptly, as though it were a message from some vaster world, he heard, or thought he heard his name. An uncomfortable premonition of fear passed over him—and he put it away from him impatiently. He leaned forward tensely—listening.

The room seemed to have caught a deep and solemn quietude, a silence that, paradoxically, was not broken by the sounds of the pump and motor. That silence alone

answered him. But he persisted, eager for communication with the Brain.

With maddening slowness the minutes dragged by. He thought, after a time, that he could hear the beating of his heart, mingling with the throb, throb, throb of the machine—and then he realized that it was the pulsation of his own mind. And still he persisted, listening—silently listening.

And finally he was rewarded! He became aware of the subtle emanation of some other, greater intellect—a formless thought that seemed to be a crushing weight. There was no question in his mind: it was the first groping attempt of the Brain to communicate with him—yet he felt no joy in the knowledge of success; he was only conscious of a chill and unearthly foreboding! He wanted to leave the place, to escape the Brain—but somehow he was powerless to move.

A struggle took place within Koszarek, his scientist's interest in his experiment striving to overcome his inexplicable fear. The scientist won, and though fear remained lurking in the background, he centered his consciousness upon the Brain to the exclusion of all else.

Again he became aware of the weight of formless thought, stronger now, more powerful. Slowly, insidiously, it seemed to merge with his own mind. In his utter and complete concentration, it seemed to be drawing his life from his body, seemed to be drawing him forth into an infinity of emptiness, to participate in thought with the struggle of the Brain for supremacy over nonexistence! Dimly at first, but with ever increasing certainty, Koszarek realized that that struggle was taking place, knew that somewhere in infinity the Brain fought with Titanic power for escape from the inert, unconscious heart of oblivion; fought for the power of articulation and expression—and was slowly, inexorably gaining it! And now he was a part of that struggle!

Above, below, on either side—nothing! Only thought and the power of thought, assailed by myriads of clutching hands of nonentities, of formlessness, of non-existence. The five senses gone—blinded, deafened, devoid of feeling—yet a vague cognizance of life.

Stronger thought grew, groping, still formless—but mounting steadily toward the light of knowledge. Ages long, the struggle seemed—endless the striving for understanding.? Endless? No; for suddenly knowledge came like a prodigious, jetting stream.

With a mind-destroying force that tore asunder the tenuous threads binding him to the Brain, there crashed upon Koszarek's intellect a tempestuous, clamorous ocean of sound, a withering, unimaginable torrent of light, a blasting, chaotic madness of understanding that almost destroyed his reason. The flood-gates of eternity opened wide—the sight and sound, the knowledge and comprehension of all ages revealed in an immeasurable instant! The past and future co-existing with the present; aeons upon aeons of time, infinity upon infinity of space—made one!

With senses shriveled in an ecstacy of torment, Koszarek fell back from the Brain, his arms twitching jerkily before him like the anguished movements of the feelers of a crushed ant. There was a roaring chaos in his head, an infinity of blackness before his eyes; and slowly he sank into unconsciousness.

"LEO KOSZAREK! Leo Koszarek! Awaken!" Through the black folds of senselessness that shrouded his mind, he heard his name. There was an imperative quality in the thought that brooked no disobedience. Stiffly, painfully he stirred, and struggled to rise. He was lying on his back; and his blinking eyes rested on a crystal globe that held a quantity of green-tinted liquid and a human brain.

That Brain—he remembered now; it had belonged to John Ovington! And that voice calling his name—it had existed only in his mind, a telepathic message from the Brain!

"Yes," came the thought at that instant, "it was a message from me—and I demand obedience. Arise—at once!"

"At once," Koszarek mumbled, hastily getting to his feet. Swaying unsteadily, he stared in wonder at the Brain. That same inexplicable fear that he had experienced before was upon him. He could not rid himself of it.

"I should hate you for your treatment of the body of John Ovington," the Brain pursued coldly, "but hatred, like all the other emotions, is a creation of the sensory organs, and is impossible outside of the body. Justice, however, is of the mind—but we'll not consider that now.

"But forget your fears, Leo Koszarek; your experiment is a success; why should you fear?"

Why *should* he fear, Koszarek asked himself. A disembodied brain, and that, the brain of the drug addict, John Ovington, could be no menace to his safety! That was obvious—nor did he fear it! A flood of courage, as from some extraneous source, had banished the disquieting dread.

"Of course my experiment is a success," he replied loftily, with the return of his customary arrogance. "I knew it would not fail when I sensed your struggle to speak. But it had to be successful, for my basic assumptions were correct . . . But tell me, what do you see?" His voice became eager, excited.

The Brain seemed to hesitate. And when the answer came, there were breaks and pauses between the phrases, as though the Brain were groping to express itself.

"There is much that I cannot tell you—your mind with its meagre strength would break under the weight of knowledge. There is much that even I cannot yet comprehend—though my knowledge and understanding is steadily growing.

"I see our universe in all its myriad stages of development—a flat, whirling spiral of nebular flame,then a mass of contracting suns; I see them condense. I see our own little sun spinning in space with its countless fellows—a diminutive thing, whirling alone. I see another star, larger, pass by—they come within the gravitational pull of each other—but their speed is such that they do not collide; they swing in a great arc around each other, and the Wanderer passes on into endless night.

"I see our sun, her surface of flaming gases torn into raging billows of fire that leap millions of miles high, whirling endlessly until she casts from her the plumes of flame. I see them contracting to form the sun's family of planets—one of them our Earth.

"I see the Earth cooling by radiation, and slowly contracting. I see a hardened crust forming on her surface, see that crust warping and buckling to form mighty, jagged

mountain ranges. I see moisture condensing and falling, and rising again to blanket Earth with a sea of clouds. I see Earth cooling to a greater degree—seas are forming, and the planet is cloaked with mists.

"I see the dawn of life upon the Earth. I see the gradual change from one form of life to another—and see the rise of Man to supremacy.

"The past history of Man, from the morning of time to what you call the present, and the future of Man, the Earth, the Sun—all these I see—and they are occurring simultaneously, are taking place in the endless, eternal *now!*

"I see you operating on the head of John Ovington—and see your end! There's nothing, *nothing*, Koszarek, in this sphere of the fourth dimension, in time, that I cannot see—or, more accurately, sense.

"Beyond the fourth there is a fifth dimension; and I sense it but dimly. Eternity, I think you would call it. It is the line, the direction perpendicular to time—but it eludes me; I cannot grasp it." The thought of the Brain ceased.

Leo Koszarek was almost speechless with excitement. His ugly face was agleam. For a moment his repulsive features looked almost attractive. But after that instant his unlovely nature asserted itself in a flash of jealousy that made itself evident in his voice.

"In every way—in every way I was right! But why can't *I* sense it—why can't *I* see it all? Mine the honor; but my senses blind me!"

Suddenly he appealed to the Brain. "Isn't there some way you can show me what you see—some means by which I can see the future—or even the past? Before you had gained the power to transmit your thoughts, I got a glimpse of it all—but it was so little—and seeing it as you see it, from the four-dimensional viewpoint, would be too much for me. But isn't there some other way?" His voice had taken on a note of pleading that was entirely out of harmony with his character.

FOR long moments the Brain made no reply. Then abruptly, as though coming to a sudden decision, the answer came; and there was a curiously *exultant* quality in it.

"Yes, there is one way; and by means of it I can show you either past or future events. But it necessitates your placing your will completely under the control of mine, as you would in hypnosis.

"I've found since gaining this sublimated state, that men follow a plan of existence somewhat akin to that brought forth in the theory of reincarnation. Thus, you, or a counterpart of you, exist numberless times in both past and future, each existence, of course, separated by a varying number of generations. Whether or not this is due to what some call the soul, others the ego, which is born in a future body—or whether it is due, perhaps, to some microscopic part of the dead mind, finding its way into the life cells of an unborn future generation, I cannot say. Nor does it matter. But the fact remains that it is so; and because of it, I am able to show you either past or future, as it has been seen, or will be seen by your past or future counterpart.

"You may think that this thought involves a paradox, that you could not exist simultaneously in different ages—but you should bear in mind that those different existences are separated by the fourth dimension—time . . . But, of course, with your knowledge of hyper-space, you understand that without my explaining!"

Koszarek failed to detect the mockery in the silent voice of the Brain.

"Anything—anything within reason to see the future!" he exclaimed. "The past would be interesting, but it is known. But the knowledge of the future—that will be of tremendous value from a scientific and a commercial standpoint! What must I do to see it?"

The reply came quickly. "First see that the machinery that keeps me alive is in perfect order; then center your mind on me to the exclusion of all else, as you did when you caught a glimpse of the hyper-world. I shall do the rest."

Koszarek carefully examined every minute part of the device that sent the artificial blood through the Brain; saw that the motor and pumps were in perfect working order and well-oiled; and tested the liquid in the tank to be certain that the Brain was receiving only the elements that it should.

Finally, all in readiness, he seized a chair, placed it directly opposite the crystal sphere, and seating himself, he fixed his eyes on the Brain, shutting everything else from his mind.

A second time he seemed to be leaving his body. Like a magnet of the intellect, the Brain seemed to be drawing his mind from his physical being—and taking the former into itself!

And slowly, with a transition, a transmutation, that he could not detect, the mind that was Koszarek's merged with the mind of his counterpart long centuries in the future.

And before him unrolled the picture of a world of inconceivable complexity, a world of super-men, and a super-civilization; and before him—rather, within him—was enacted the tale of a life, *his* life in that future world.

CHAPTER IV.

The Super-Race

THERE was a black, angry frown on the face of the man who gazed out through the tower window into the night at the giant, human beehive, Cosmopolis, the world's largest city, in the year of 2944. His eyes were narrowed, and his lips were drawn into a thin, straight line that drooped at the corners.

A deep roar of sound, a ceaseless medley of voices, electrical, mechanical, human, poured up to him in a veritable torrent—the city made articulate. One above another in a series of tiers, the traffic levels rose, each contributing its individual sound to the bedlam. The dull rumble of the heavy freight vehicles on the lowest levels, the high-pitched roar of the passenger cars on the levels above that; the voices of the pedestrians still higher; and on the highest level, the ceaseless hum of the dangling monorail cars, flashing endlessly over the network of shining steel that covered the city. And above all these, droning like so many angry hornets, the myriad aircraft of the period darted, crossing and re-crossing in a nocturnal sky that was aglow with countless vari-colored beacon lights.

The frown on the face of the man at the window deepened; a wave of red crept up the knotted cords of his neck, suffused the set jaws, then suddenly swept in a tide over cheeks and temples. A low laugh, cold, unpleasant, mirthless, fell from his lips. It ended in an almost inaudible snarl. Then the man was silent, and motionless, and only his eyes were active, glaring out of deep sockets like points of black light; only his eyes—and his mind.

How he hated it—the glare of lights, the towering buildings, the madly speeding vehicles, the vast milling throngs! He hated, loathed them all—*all*—for they were the instruments, the subjects, aye, the creations of—the Brain!

The people—he hated them particularly! This self-styled super-race, this race of physically perfect beings, every member of which had even, regular, harmonizing features, without spot or blemish, whose bodies were matchless physical machines—God! How he hated them! For of all Earth's billions, he alone was ugly, he alone, deformed! They were perfect—and he was not—and because of his deformity he was a creature set apart from them, tolerated, but secretly despised.

He hated the people; yes—but far, far beyond that feeling was his hatred for the Brain, the power behind the super-race, the cause of it all. For the Brain had conceived the present complex world, had brought about the present perfection of the race; and likewise, it had been responsible for his having to remain the one anomaly, the one physical monstrosity in the civilized world!

More than a thousand years before, so history said, the Brain had come into existence. A scientist of that day—his name had been lost during the centuries—had removed the brain of a man and had kept it alive by artificial means. For some strange reason that brain had developed incredible mental powers, powers that it had exerted through the scientists that attended it, until it had become the recognized scientific authority of the world. And gradually as the years of the Brain's life dragged into centuries, and after countless changes had been made, countless inventions introduced by the Brain, all mankind had accepted the bodiless thing as their ruler.

Four centuries in the past the Brain had established its most revolutionary change—the change that most particularly affected the man at the window. At that time the world had been faced by a seemingly insoluble problem. The steadily increasing fertility of the less desirable members of the world's population was gradually, though none-the-less certainly, lowering the mental level of humanity. The Brain, to correct this, working through the scientists, created the first ectogenetic child. An ovary was removed from a woman who had been killed in an accident, and was kept alive in a liquid similar to that which held the Brain. Several eggs were obtained from it, fertilized successfully, and the embryos grown for nine months, then brought out into the air—living, normal children.

In spite of strong opposition, the Brain gradually established ectogenesis throughout the world, until two generations back, it had been declared a criminal offense, punishable by death, for children to be born of women. There were few offenders, however, for the women of the world were glad to escape the pain and travail of childbirth. And the comparatively small number of men and women who were selected as progenitors for each succeeding generation, were so unquestionably superior to the majority, that a marked mental and physical advance in the race became evident almost immediately. Gradually the present super-race had been created.

The man at the window laughed shortly, bitterly. *He* was the result of disobedience of that law, the ectogenetic law, as it was called. He had been born of a woman, a woman whom he had never seen; and the Brain had permitted him to live as an example of what disobedience to the law would result. And because no individual in this age could lead a useless life, he had been trained to become a scientist, a student of chemistry.

HE turned and surveyed the room—his laboratory. A laboratory that contained everything that a chemist could desire—but he loathed it—for behind it was the Brain! Everywhere—*everywhere*—the Brain! The thought was maddening.

Hatred for the Brain—his mind seemed able to grasp only that. His thoughts moved in a cycle that began and ended with the disembodied thing. Day and night his own brain would not stop mangling and tearing itself to pieces—and would not let him rest—and there was no peace—none! His lips drew back in an angry snarl, and a low, bestial growl welled up in his throat. Then he began to curse violently, giving vent to his hatred for the Brain.

After a time the paroxysm passed; the demoniacal hate on his face faded. Through utter exhaustion the voice of hatred in his mind had ceased its plagueing.

He moved slowly toward a doorway in a far corner, a doorway that led to his bedroom. He'd try to get some much-needed sleep. He paused before a small, concave mirror in the wall beside his bed—a mirror that strangely reflected his entire figure in miniature, yet without distortion—and gazed at his features. He was ugly, there was no question about that. Those bony protuberances above his eyes; his prominent nose with its cruelly depressed tip; his high, square-cut cheek bones, and hollow cheeks—and above all, his deep-sunken eyes—they constituted a picture of grim ugliness. He made no attempt to deny it.

His body too, with its twisted spine and crooked legs, one shorter than the other—it was a repulsive thing! And the costume of the day, the garb of the scientists, sleeveless, loose-fitting garments of white cloth that reached to the waist, dark blue trunks terminating midway between waist and thigh, and insignificent sandals—they but served to make his ugliness more evident.

He ground his teeth as he gazed at his image, for he knew that, had the Brain so willed, his deformity could have been corrected. But that had been denied him—the ever-recurring thought returned again—by the hateful, the accursed Brain!

Suddenly breaking in upon his thoughts, he heard a sharp buzzing in the laboratory. With a muttered imprecation he left the bedroom, and approached the small duo-televisor screen that stood close to the door. With an effort he drew his face into an expressionless mask; then deftly made the necessary contacts.

The interior of a great, dome-ceilinged room of palest lavender appeared on the screen. Walls and ceilings

were of glass, cast in great, translucent slabs; the floor was a sheet of highly polished metal. In the center of the chamber was the hollow crystal globe that contained the Brain. And beneath the globe was the apparatus that kept the Brain alive. a series of tanks, pumps and atomic energy motors that were as perfect as machinery could be made. Centuries before, at the direction of the Brain, they had replaced the original antiquated devices that the Brain's creator had used.

"Clavering," the thought came to the man in the laboratory. "I need the liquid upon which you have been laboring for the past two months—and I must have it tonight! You have your directions; you will complete the process within the next hour. Bring the liquid to me when you have concluded your task!"

The screen flashed white; the thought of the Brain had gone from Clavering's mind. The latter broke the contact.

For long moments he stared at the duo-televisor screen. an angry flush creeping over his face; then abruptly he shrugged his shoulders. It was the way of the Brain; he had to obey

For two months he had been conducting countless experiments under the guidance of the Brain, slowly. very slowly, forming a liquid that he believed was the long sought-for elixir of life And now the end was in sight.

He limped across the laboratory to a long table on which a deep blue flame burned under a device somewhat resembling an alembic. Swift, little phosphorescences played over the surface of the crimson liquid within. Strange fumes arose. , Beside it in an apparatus of twisted quartz, a clear blue solution sparkled. Other activities were going forward. Donning a long white robe, Clavering resumed his labors.

Gradually for him the room seemed to vanish; only his work existed. With complete concentration he bent his mind upon the task before him.

After a time he relaxed to some extent and his thoughts turned to the purpose of the liquid that the Brain desired. Little more remained to be done; his work no longer required his complete attention. That this *was* the elixir of life, he felt sure—though why he had come to that conclusion, he did not know. True, he had repeated in part the experiments of the ancient alchemists of former ages, alchemists and philosophers whose lives were now only legends—Aristotle, Albertus Magnus, Roger Bacon, Aquinas, Paracelsus— and they had been seeking the Alkahest, the universal solvent; but their's were selfish ideas! He had followed the directions of the Brain—that was all; but all during his labors the thought had beat incessantly upon his mind that this *was* the elixir of life, the solvent of death!

HE raised a test tube to the light, stared for an instant through the liquid it contained, then replaced it in the clamp above the flame. He waited patiently until the furiously boiling fluid had varied from a dull brown to a deep emerald, then dropped a minute portion of the fluid from a little bottle into the tube. In an instant the substance changed to a brilliant yellow that glowed with a living light. Clavering removed the test tube, turned down the flame, and cooled the liquid in running water—and the thing was done! Whatever it was that he had made, it was complete.

He transferred the sparkling fluid to a platinum flask that contained more of the substance; and he was ready to deliver it to the Brain.

Hastily he started toward the door, as though he feared the substance he bore. His mind seemed not his own.

"The Brain! The Brain! It must go to the Brain!" he muttered—then abruptly he stopped short, his eyes wide in wonder at the thought that had come to him.

For long he had sought to enter the Chamber of the Brain to destroy the object of his hate, but his efforts had always failed. None were permitted there unless they were summoned by the Brain. And now the opportunity was at hand! At last he might be able to blot out the monstrous thing that had been responsible for his remaining the object of scorn that he was!

He had a weapon—oh, yes, he had a weapon! Scientists were not supposed to have weapons of any sort while in the Science Tower—they were forbidden by the Brain—but he had constructed one, a diminutive thing that he could well conceal beneath his garments, but that was powerful enough to shatter the crystal ball with the metal pellet that it cast from itself. And he knew how to use it; he had practiced for long hours. He had made it to destroy the Brain; and now he might be able to use it!

Clavering was beside himself with excitement. "The Brain! The Brain! Death to the Brain!" Wildly the thought throbbed through his mind. Trembling with eagerness, he secured his little weapon, concealed it beneath his white jacket, then left the laboratory.

Quickly he stepped upon the moving half-section of the floor that aped toward the center of the building, and was swept toward the great elevators in the heart of the gigantic tower. Upon reaching them, he was accosted by a tall, handsome, powerfully-muscled guard—one of the hated "super-race."

"Well, what do you want, Clavering?" the latter asked gruffly.

"Audience with the Brain!" Clavering drew himself up as straight as his twisted form permitted.

The guard adjusted his portable duo-televisor, and spoke to the entity in the crystal sphere.

"He may come; I called him," the thought came to them. And Clavering entered an elevator that bore him upward with incredible speed.

Up—up to the very top of the mile-high Tower of Science, where, in the gigantic dome that crowned the tremendous structure, was the Brain!

Clavering was strangely cool now; his nerves were steady; to all outward appearances his mind was not particularly concerned about anything. One hand carried the flask of yellow fluid, and the other hung free; but under the arm that held the flask was pressed his weapon.

At length the speeding elevator came to rest and Clavering alighted. He was in a vast, circular hallway that completely surrounded the domed Chamber of the Brain. Only one doorway led into the room; Clavering saw it a hundred feet away. But he made no attempt to approach it; a telepathic message had commanded that he wait.

Coolly he moved toward one of the many windows that alternated with the elevator doors in the thick walls of the

circular hallway, and gazed out over the city. From his vantage point in the tallest of the towers of Cosmopolis he could see to the farthest corner of the city he hated—though the maze of beacon lights and darting planes far below him distorted his vision to some extent.

A vast, broken, sky-blue plain from which jutted countless spikes and spires, Titanic domes and arches, gigantic pyramidal masses of masonry with flattened tops; sparkling ribbons of light that were the streets, one rising above another, five ten, twenty aerial thoroughfares—that was Cosmopolis! And above it rose the four great towers—the Tower of Science, the Tower of Business, the Tower of Art and the Tower of Music. The terraced Tower of Science—this tower—was the center of all, like the hub of a Titanic wheel. And like a wheel, the great avenues, its spokes, began at the Science Tower and led out in straight lines, with other streets crossing like the glowing strands of a spider's web. And at carefully planned intervals at the city's edge, the three other towers projected into the sky—lesser towers housing industries of lesser importance. For high above even these three rose the Tower of Science—the dwelling place of the scientists of the world.

CHAPTER V

The Triumph of the Brain

CLAVERING'S lips twitched into a sneer. A great city, a tremendous city—yet the super-men had made every external part of it either dark green or blue, because it appealed to their sense of beauty, and because they said that blue and green were restful to the eyes!

It was almost silent up here; only a faint hum of sound reached him—so far below were the noises of the business levels. Silent . . .

"I am ready, Clavering!" It was the silent voice of the Brain!

Clavering turned from the window and limped toward the opening into the domed chamber.

He reached under his jacket and grasped his weapon—and suddenly he realized that he was no longer as self-possessed as he had been. Now that the goal of his hate was within his grasp, his mind was in a state of turmoil. Almost idly he had gazed out over the city—yet all the while, subconsciously, his mental unrest had been marshalling its forces. Emotions, the gamut of them, assailed his brain like vultures swooping upon their prey; his mind began suddenly to stumble. What was wrong?

Then abruptly he was in the Chamber of the Brain, without a conscious knowledge of how he had gotten there. His jaw sagged dumbly; his eyes widened in unbelief.

Ranged in a half-circle before him, between him and the Brain, were members of the Guard! Mechanically he counted them—twelve—thirteen—and they were tall and strong—and it was a trap, a trap set for him!

Something seemed to *snap*—audibly—in his mind; he felt his muscles grow taut as steel; and a madness of hate seized him. Curse the Brain! Curse the handsome faces before him!

The hand holding the platinum flask drew back, and the heavy thing flashed through the air. It crashed against the forehead of one of the men; he slumped to a motionless heap—and Clavering laughed wildly.

They were closing in upon him now, the Guards; and he was vaguely aware of the thought of the Brain urging them on. The Brain! He had forgotten! His weapon flashed up, and he pressed on the little knob at its back. His aim was good—but one of the Guards leaped between him and the Brain . . . And then reason left Clavering completely.

The domed room, the Guards, everything before him whirled around in great, red, pulsing circles. A fury that shook him to the depths of his being took possession of him. He knew nothing, was moved by nothing save an overwhelming lust for vengeance. With a mad cry he tore into the Guards.

The fight could not last long—nor did it. In a moment Clavering, biting, kicking, and clawing like some ravenous beast, went down under the superior numbers and strength of his attackers. Something struck his head—and blackness descended.

A telepathic command from the Brain brought back Clavering's senses. The Guards were holding him powerless before the crystal globe. He stared with fearful fascination at the Brain, with its countless convolutions; and he continued staring when the Brain addressed him.

"Where is the flask of that fluid you were to bring to me, Clavering? Oh, yes; it lies close beside you. You thought it might be the elixir of life, did you not? And were tempted to drink it? You thought wisely, Clavering—I saw to that. It *is* the solvent of death; and your impulse to drink it was only natural—since I had you make it for yourself! You will be the first man to use it! Think of it—eternal life, as I have eternal life!"

A Guard stooped at the command of the Brain and secured the somewhat dented flask. Removing the cap, he held the vessel in readiness.

"Because you might attempt to frustrate my plans, and refuse the honor I am conferring upon you," the Brain continued, 'the Guards will hold you while they force you to drink. After that you will be released; for I regret to say that your body will become rigid and lifeless, literally petrified. Your brain alone will have eternal life. It is merely justice; you must forfeit physical life for the mental. Always I'll have you with me. And our friendship will grow and grow!" The taunting thought ceased.

Clavering's mind was a seething vortex of fear. Eternity with the Brain, his body a rigid, helpless thing—his reason froze at the thought. He screamed in a flood of madness.

And then despite his struggles his head was forced back, his jaws pried open; and they were pouring the sparkling liquid down his throat. Involuntarily he swallowed—and then he was free.

His body was afire—yet he was frozen by a blast of feeling colder than ice. He staggered back a step, clawing at his throat. His eyes closed—and opened again to stare wildly around. He gasped—an instant's pause—then suddenly a quivering, an uncontrollable tremor possessed him. Quickly it was gone, and in its place Clavering became aware of a strange, cold numbness that was creeping over him.

The Guards were watching him intently—and there was the Brain—and eternity lay before him. Eternity with the Brain? God, no! There was one way of escape—only one.

With a sudden, wolfish howl he whirled, fighting against

the numbness. He dashed through the door; and none moved to stop him. The windows—there lay escape!

His muscles were rapidly growing cold—soon it would be too late—and the Guards were after him now. With a final, frenzied effort he leaped, was on the window sill. A cry arose from the Guards; he sensed the thought of the Brain, *chuckling* amusedly; and then he leaped far out with all his waning strength.

And turning end over end like a lifeless thing, he hurtled down, down—rapidly down—endlessly down, in an eternity of falling—until there was a tremendous crash, a flood of absolute blackness—and the oblivion of death.

Clavering the Deformed was no more!

DR. LEO KOSZAREK slowly opened his eyes. What—what had happened? He was conscious of lassitude and fatigue, as though he had been upon some long journey that overtaxed his strength; and his body was trembling; his mind seemed to be in some mental maze that had entrapped him, a maze from which there was no escape. What—

The Brain! There it was—the accursed thing—directly before him! But—but he had leaped from the window; had fallen horribly down, down . . . Then in a flash he understood. That had been Clavering, the crippled scientist of the future, whose adventures he had experienced through the agency of the Brain—but he, in the present, was Leo Koszarek! That, after all, had only been a vision; this was reality.

"God, but it seemed real!" he exclaimed in a shaken voice as he arose from his chair. "I still can feel my body—or Clavering's body—growing numb and cold—and—and can still feel that terrible, endless falling!" He shuddered at the thought.

"Seemed real!" the Brain replied. "It was real. You saw what is happening in one small part of the fourth dimension—in the great, all-inclusive now. But that was nothing compared with your next phase of existence!"

Koszarek seemed not to have sensed his thought.

"But your knowledge, whence came the knowledge that enabled you to accomplish all you did in the future world?"

"From the even more distant future, of course—a time when Man, after sinking to the lowest depths, has climbed again to incredible heights. Since I see all that is occurring in every age, I have but to choose what I wish from Time's store of knowledge, and transmit it to others for execution. There is no paradox in this; I am in no wise changing the future—for in the fourth dimension all is the present; and in certain portions of that present I exist.

"But come; I shall show you your next reincarnation, if we may call it that—your existence as Vastine, attendant of the Brain, in the year 3660."

Involuntarily Koszarek shrank back. Fear of the Brain was upon him again—though that fear was not so inexplicable now. For the Brain was a thing of tremendous power; and he was terrified by that power. He—he had seen enough of the future. Better for him and the world if this entity were destroyed! He'd destroy it himself—but—but—he *couldn't!* It had existed in the future; and he could not possibly destroy it now, thus interfering with future events . . . Careful! the Brain knew even his present thoughts!

"Come, come, why do you delay? You wanted to see the future, did you not? Through me you may see it. Think—that world of the supermen that you saw, laid in ruins, the result of an invasion of the monstrous inhabitants of a planet in a distant galaxy. Mankind almost obliterated by the invaders. Think, Koszarek, of yourself as Vastine, the one through whom the world is saved from the invading hordes! Of course you want to see it!"

Koszarek felt an almost irresistable curiosity sweeping over his mind. He wanted to see the world of the future; of course he did! What ridiculous thoughts those had been that had made him fear the Brain! Fear the Brain? There was no reason for fear, for his creation was a kindly, benevolent thing—at least, something seemed to be telling him that it was . . .

Abruptly Koszarek shook his head. His mind seemed to be in an incredible state of disorder, seemed to be possessed of thoughts that did not belong there!

He shrugged his shoulders. He was certain of one thing, at any rate; he wanted to see the world of 3660, indeed, must see it!

"Of course I want to see it," he said to the Brain, replying in the exact thought of the latter.

"Remember," the Brain admonished, "that all you have seen and will see is unchangeable. The invasion of the world—I knew—or know—it is to take place, yet it cannot be avoided, because it already has taken place—in the future. I can do nothing that lies beyond the natural course of events.

"And now—complete concentration on me."

Koszarek relaxed in his chair; and for the second time he experienced that strange merging of himself with the Brain; and again his mind, in experience, was transported to the remote future wherein he lived and moved, a part of the future life.

CHAPTER IV

Monstrosities From the Sea

"THEY come, Master, they come!" The alarmed cry echoed through the great chamber of the Brain as Vastine the attendant darted through the portal and sped toward the crystal globe and its occupant. He cast furtive, terror-stricken glances over his shoulder as he ran. Panting with nervousness and cringing fearfully, he paused before the mass of apparatus in the center of which was the Brain.

Quietly, dispassionately, unruffled, came the thought of the Brain: "Do not fear; I knew they were coming; they will do no harm."

"But they can read the thoughts of men; and they will know that I have some scientific knowledge, and because of it, they will destroy me, as they have all the other scientists that they've discovered! And—and I cannot hide."

Again the thought came: "Do not fear. *My* thoughts they cannot read, for though their minds are great, mine is greater. You will yield yourself completely to me, and I will replace your intelligence with mine. Then, when they strive to read your thoughts, they will learn only that which I desire to have them learn."

With an effort Vastine composed himself and thought only of the Brain—and in an instant his mind was blank,

and his intelligence was gone, dispossessed by a greater.

Not a moment too soon had the Brain taken over the control of Vastine's body, for suddenly in through the portal of the domed chamber drifted the objects of Vastine's fears. Six great globes of transparent crystal, fully four feet in diameter, they floated toward the Brain. Globes of crystal whose shining surfaces were constantly flashing the manifold hues of iridescence—and globes from which protruded at regularly-spaced intervals a series of long, needle-sharp, metal-capped spikes. And behind each spike, within the spheres, hung a minute metal mechanism.

But none of this had inspired fear in Vastine's breast; his was fear of the repulsive monstrosities floating in the almost colorless liquid that filled the globe. Unlike any creatures of Earth, were they, though they resembled to a slight extent deformed octopi whose tentacles had shrunken and shriveled to a small fraction of their normal size.

Roughly circular, their bodies were, covered with a sheathing of minute scales that gleamed like burnished copper. On opposite sides of the things gleamed two, unwinking discs of crimson fire, their eyes. And between those eyes, in a cincture that completely encircled the monsters, protruded countless, thin, scaly, snakelike feelers that seemed always to be in motion that seemed never to cease their nervous twitching and darting about.

When the spiked globes reached Vastine and the Brain, they paused, floating in midair. Then one of them separated itself from the main body of globes and arose to a position directly above Vastine's head. A tremor passed over the man's frame; then he was motionless, rigid, as though chained. And from one of the globe's metal-capped spikes leaped a wide-spread beam of utter blackness, a funnelshaped, ebon veil that was the complete cessation of all light. It covered the man completely for long moments—then was gone.

Into Vastine's mind—the mind controlled by the Brain—came the thought, strangely reptilian:

"Not much of knowledge have you—weak is your mind—and it is well for you. For in your ignorance you can do naught to impede the progress of our plans—else would we destroy you. Even so would you die were it not that you are the watcher of this—Brain you call it—and at our leisure we desire to study this strange thing. See you that you watch it carefully until we return! And see you that you remain within the confines of this tower—for on the lower levels lies only death for you and your kind." The thought ceased and the monster in the spiked globe joined its fellows.

For an instant they hovered motionless—then without warning six beams of the uncannily *solid* blackness leaped out toward the Brain, completely encircling it. Somehow it seemed to be probing deep, deep. Then, as though in anger, baffled, the beams of gloom vanished. The globes, one after another, sped through the portal, out into the great, circular hallway, and from thence through a window into the open.

For a fleeting instant after they had gone, Vastine remained immobile; then, with the withdrawal of the Brain from his intelligence, and with a rush of knowledge of what had occurred, he sprang in the monsters' wake. Upon reaching a window, he leaned far out and watched the spheres flashing rapidly downward, until they plunged into the waters that lapped the sides of the Science Tower a half mile below.

And then, as he had done countless times before, Vastine gazed out over the desolate scene that lay below him. And as his eyes swept in a wide panorama over an inundated world, a heavy weight of hopelessness, of futility settled on his heart.

Water—everywhere! An endless green expanse that lost itself far away in the blue-grey of a somber sky. Mile upon mile in every direction the solemn waste of water stretched, a boundless ocean that covered all of Earth, that swallowed up both the creations of nature, and the structures of man, save only the highest mountains and the tallest buildings.

OF all the structures that had constituted the gigantic city of Cosmopolis, only the four towers—the Towers of Science, Business, Music, and Art—remained above the surface of the water. Here and there the waves swirled white and seething about the top of some great structure that almost reached the surface—but aside from that all sight of Cosmopolis was gone.

And ever, unceasingly, the sea warred on all that remained above her surface, battering with her tides and currents, corroding with her salts, beating and crashing with her tempests—until eventually nothing but water must remain—until eventually nothing of man would appear on the face of the deep—until Earth would become an aqueous world!

With his mind the prey of an unredeemed dreariness of thought, Vastine drew back from the open window, and returned to the chamber of the Brain. He crossed to the apparatus in the center, pausing before the living entity that it held, and looking up at it as though expecting some communication that would dispel the gloom in his mind. But no message came.

After waiting a few moments, Vastine turned away and moved over to a long, narrow bed which had neither head or foot-board, and which rested on legs that raised it about six inches from the floor. He cast himself on this, stretching to full length, and yielded his mind to gloomy retrospection.

He was afraid—deathly afraid—and he knew it. All this must end very soon, with the sea and the marine monstrosities victorious, and man and his works totally obliterated—and he, Vastine, must die! It must be so; it could be no other way! All the men of science were gone—though even while they had lived they had been able to do nothing to save humanity—so no hope lay in that direction. There still remained the Brain, and himself—but he could do nothing; and the Brain had done nothing up to this point, at least. Hope! There was none.

After a time Vastine's mind reverted to the coming of the invaders two years before his birth. Numerous were the tales of their arrival that he had heard as a boy. A great horde of black metal spheres had fallen from the sky at night, flashing downward into the sea. Their coming had been seen by men on a floating airport on the breast of the Pacific. One had struck a corner of the great metal plain—and had been captured. The men had forced the metal sphere open, killing the monstrosity within it—but not before it had sent forth to its fellows a telepathic plea for aid.

The latter had come, a great cloud of spiked crystal globes, divested of their metal armor, had swept all life from the surface of the airport—all save one man, who had concealed himself, and who had later returned with the tale of the invaders' coming.

Then the cloud of globes had divided, and had spread abroad over the face of the Earth. A night of terror, devastation, death had followed for every city on Earth. The globes, flashing about high above the teeming hives of humanity, had hurled showers of liquid fire down upon them, fire that cascaded over the cities like molten metal, white-hot, searing—but metal that seemed not to cool as it flowed. Like a crimson-and-amber acid that glittered and flamed, it had eaten its way from level to level, from aerial street to aerial street, destroying as it went, until at last, after working incalculable destruction, its powers had slowly vanished.

Spasmodic, ineffectual attempts at retaliation had been made by fleets of armed helicopters, hastily marshalled, but the globes had out-maneuvered them at every turn, and had put them to route with their liquid fire.

Then, before the devouring flames had completed their work, the globes, spinning madly, had sent thin jets of purple vapor from the tips of their spikes. The vapor spread in faint, tenuous clouds and sank slowly, like blankets of fog, over the cities. And men, as they breathed the vapor, slowly, with agony unspeakable, had passed into the oblivion of death. Then the crystal spheres had darted away to vanish beneath the sea.

So delicate had been the balance of the complex super-civilization, that that single night of turmoil had been enough to start it tottering on the brink of destruction. It was not the loss of life that was to blame; rather was it the complete demoralization of commerce, the disruption of industry, the shattering of organised government. Given time, of course, conditions would have righted themselves—but the invaders gave Man no respite. An unremitting warfare between the monsters in the globes and the human race had begun, to continue for fourteen long years.

All that had occurred before he, Vastine, had been born—a natural birth, his, for with the coming of the invaders the long-standing Ectogenetic Law with all other laws, had become void, meaningless. His parents had been a male and female scientist who had given him birth and had raised him in the heart of the Science Tower. ,

SHORTLY after he had reached his twelfth year the warfare between mankind and the invaders ceased. For then—the floods had come! Until that time the monstrosities had made no concerted effort at destruction except the first, evidenlty occupied with some preparations and tasks of greater importance to them. But in the fourteenth year after their coming, they had emerged from the sea in all their power.

Millions upon millions, there must have been, the result of fourteen years of procreation. From Atlantic and Pacific, from every large body of salt water on Earth, they had risen, to gather in a gigantic body in the upper reaches of Earth's atmosphere.

And mankind, expecting another deluge of fire, had cringed in abject fear.

But the globes had ignored the puny humans, and as though by prearranged plan, had divided into groups; and each great group had flashed away on a mission that would result in death for Man and increased life for themselves. Several had gone to the Arctic ice cap; others to the Antarctic; and still others to the snow-covered peaks of Earth's great mountains. And hovering above the frozen wastes, they had loosed their torrents of liquid fire—to *melt* the snow and ice of Earth—to flood the seas and make them rise—to drown the world of Man!

From all high places the myriad converging streams had flowed, as the mountain snows had dissolved, mad torrents of water that swept all before them. From the mighty Alps into the European lowlands; from the Himalayas into the Ganges plains; from the African heights into the slowly-rising negro civilization, and northward into the thickly-peopled Egyptian flatlands; from the Rockies into the gigantic cities of the world power, America; from the Andes into the vast South American manufacturing centers—from all these and other lesser heights the aqueous doom had triumphed down.

But far worse than these, even in the aggregate, had been the thawing polar ice sheets—they had been the cause of the ocean's fearfully rapid rise.

Refuge? There had been none save in the great towers and skyscrapers—and these could hold only an infinitesmal fraction of Earth's hordes. Fights there had been for the meagre available refuge—a mere lad, they had terrified Vastine; and he remembered them now—bloody, brutish affairs!

His scientist father at that time had been an attendant of the Brain; and when the globes had started to flood the world, though before panic had stricken humanity, the Brain had told him of the impending doom, and he had taken his wife and son up into the domed chamber with him. After securing a supply of water and food tablets, he had fastened the door of the room beyond all power to release it from within.

Weeks had passed before the Brain had informed them that the waters had ceased rising, that the ice and snow were all gone, and that they could safely open the door. They had done so, to learn that the half-mile of tower that still remained above water was filled with an incredible number of scientists, living in terribly congested conditions. But because they feared the Brain and its power, they had left the domed chamber unmolested.

That had been five years before, five years during which the marine monstrosities had been seen but rarely; evidently they thought that the few survivors of the flood could be no menace to them—nor had they. During that time, Vastine's parents had died—whether by violence or accident he did not know. They had gone below into the tower for water—the salt water of the sea was distilled in the laboratories—and had failed to return. And he, Vastine, had become the attendant of the Brain.

All had been well with him after that—though the scientists below had not been so fortunate—until three days before, when some of the globes had come out of the sea to destroy the surviving men of learning, and to put into effect some plan that they evidently had in mind. He had been in a state of fear for all of the three days; and the visit he had dreaded had finally taken place.

But soon all would end, *must* end—and—and he would die . . . His mind, moving in a circle, had returned to his original thought.

CHAPTER VII

The Warning

"VASTINE, come here!" Abruptly the Brain broke in upon his reverie. In a moment he had risen and stood before the crystal sphere.

"Yes, Master."

The thought of the Brain came slowly, with great deliberation:

"The time has come, Vastine, for these monsters from space to be destroyed. I could do nothing before, because the hour had not arrived; but now the invaders' destruction and the salvation of man are to be accomplished."

A momentary doubt assailed Vastine, to be replaced instantly by a wave of eager joy. Was not the Brain all-powerful?

"Far out in space," the thought of the Brain continued, "a gigantic swarm of meteors is sweeping across the void with terrific speed. Before long it will reach the orbit of the Earth—and Earth will pass through the very heart of the swarm!

"The world has passed through clouds of meteors before this, but none of them remotely approached this one in density and in the size of its component bodies. Under ordinary circumstances the bombardment of incandescent metal would reduce the world to a miniature sun; but now the water will be the means through which we escape that fate. For the meteors upon striking the water, will be cooled, and their velocity will be checked.

"And as the water saves Earth from the meteors, so will the meteors free Earth from the enslavement of the waters. For when the molten masses strike the sea, the oxygen in the water will unite with the hot iron in the meteors—and they are composed chiefly of iron—to form iron oxide; and the hydrogen will be free as a gas, which will unite with the atmosphere.

"I am aware, of course, that this vast amount of hydrogen in the air would render it unfit for breathing. So, many years before the coming of the invaders, I had an apparatus constructed that will rid the atmosphere of the excess hydrogen. It lies far down under the water now, but at the proper moment, when the water is reduced to a certain level, it will begin to operate.

"The apparatus—though you can scarcely comprehend even a part of my explanation—employs a principle brought forth many centuries ago by a famous astronomer of that day—the idea that under certain conditions the transmutation of elements takes place. This scientist said that in the Sun hydrogen is constantly changing to helium gas, by the union of four atoms of hydrogen to form one atom of helium. I've gone a step farther, and my device will change hydrogen to helium, and helium to palladium—the latter, a silver-white metal which has the power to absorb a great amount of hydrogen without losing its metallic form. This metal will aid my transmutor—but enough of explanations! They mean nothing to you.

"You'll be more interested in knowing that the monsters in their globes will die during the meteoric shower, for the seas will be boiling, together with the liquid in which the creatures float. For, though the invaders send streams of liquid fire from their globes, that fire has no great heat until it unites with the oxygen in the air; they are no more immune to heat than is Man.

"Ask me not how I know all this; that I *do* know is sufficient!"

Numerous questions leaped to Vastine"s mind as the thought of the Brain ceased for a moment, but he knew that to give them utterance would avail nothing; the Brain would tell him only that which it wished him to know. In silence he waited.

Suddenly the Brain resumed its communication.

"During the rain of meteors, the few towers that now remain above the water, and many of the buildings that are submerged, will be shaken to their foundations, some even destroyed, while the tops of most of them will be shattered and broken by bombardment. The Science Tower will be one of those most seriously affected—we'll have to leave this chamber immediately."

"Leave!" Vastine exclaimed. "But there is no place for us to go to—and how can you leave?"

The thought of the Brain continued uninterrupted.

"When this tower was erected centuries ago under my supervision, I had the artisans construct a great, circular shaft that begins beneath the floor of this room and reaches to the ground level of the tower. And beneath the shaft on that level, is a chamber identical with this one, a chamber which, together with the shaft, I had constructed for just this emergency. For in that chamber we'll seek refuge from the meteors."

THE Brain then directed Vastine to gather together his entire supply of food tablets and water, and to place them on the floor close to the device holding the Brain. As he did this, Vastine noticed for the first time that an almost invisible line in the floor completely surrounded the Brain, forming a great slab of metal fully eight feet in diameter, a slab separate from the rest of the metal floor. He placed his bed on end within the circle, beside his supplies.

Then at the Brain's direction, he turned a little knob in the exact center of the slab, beneath the apparatus of the Brain—and they began sinking slowly.

"This, like the motors in my apparatus, is run by atomic energy," the Brain informed Vastine.

Down, down they sank, slowly at first, but with their pace accelerating until they were descending at breath-taking speed. Vastine clung to a metal support in a sort of frenzy as the smoothly polished walls flashed by them. Steadily the light from above grew fainter, till at last they were hurtling through utter blackness.

After an interminable period of downward progress, the slab of metal seemed to check its speed. At last they were only creeping along. And then, when they seemed to have reached a standstill, the slab of metal jarred against another hard surface; there was a sharp clang—a slow drop of fifteen or twenty feet—a faint click—and the sudden flood of light streaming from the lavender walls told Vastine that they had reached their destination.

Quickly he stepped from the sheet of metal, and at the Brain's command, removed his supplies and his bed. As he did so, he noted that there were now two layers, one of metal, and one of glass, the latter evidently a part of the ceiling of this room. With his possessions removed, he stood before the Brain awaiting orders.

"Now," the message came, "you must lift the entire mass of apparatus that holds me, and bear it to one side

of the slabs so that they may return to their former positions."

Vastine stared in amazement at the entity in the sphere of crystal. "But—I—I can't lift all that weight!" he cried in consternation.

"You can," the Brain replied, "if you'll let me control your body, for my will is far stronger than yours . . . But first we must deal with a visitor!"

At that instant Vastine fell back from the Brain with a cry of terror. For into the room from the mouth of the shaft above him had dropped a great spiked globe; and from one of its spikes flowed a stream of liquid fire. Only for an instant did the radiant stream strike the floor; as abruptly as the monster had come, the fire ceased flowing. And the spiked globe hung motionless in mid-air, every tentacle of the monster within it reaching toward the Brain.

Vastine stared at the creature in wide-eyed surprise. Then he became aware of a Titanic struggle that was taking place. It was silent, and motionless, yet it was violent—the clashing of two powerful wills.

Moment after moment he watched the tense figure of the monster—then abruptly it shrank back to the rear wall of the globe, and the spiked sphere settled to the floor. With a slow, cringing, beaten motion, one of the slender cords reached out, fumbled with a device behind a spike—and a circular section of the globe drew aside, leaving an opening a foot in diameter. Out through this the monstrosity crawled, collapsing on the floor like a pricked balloon. The globe tilted over and dashed its contents across the floor.

With a little shudder of revulsion, Vastine drew back his foot and kicked the quivering, flabby thing to the far side of the room. It landed with a dull thud and a rasp of metallic scales—then it lay still.

"Vastine!" It was the Brain. "The survivors in the three other towers must be warned of the coming shower of meteors in order that they may hide in the depths of the towers and escape destruction. This globe affords a means of your accomplishing that end. You shall enter the vehicle, rise up the shaft, and visit each of the towers. The shaft will remain open until you return."

While Vastine poured the remainder of the liquid from the globe, the Brain revealed how it was operated—knowledge it had gained in its mental struggle with the monster. Then Vastine crawled into the globe, closed the twelve-inch opening, and gingerly fingered the mechanism behind the spikes. As they answered to his touch, his confidence increased, and an instant later he flashed up through the blackness of the shaft.

Nearing the top of the tower he checked his pace, and proceeded cautiously through the domed chamber, across the hallway, and out through an open window. The gray of dusk had fallen; Vastine was thankful for it, for it minimized the chances of his being discovered by the monsters. But with the open sea below him, a sea whipped into long, rolling, white-capped waves by a brisk wind, his courage faltered; the spiked globe however continued unswervingly toward the goal he had set, the Tower of Music. It buoyed up his spirit. In a very few minutes, it seemed, he reached the gigantic edifice.

DIM lights shone from the windows to within a few hundred feet of the water; faint sounds of music drifted out into the twilight air from the highest floor. But when Vastin's globe drifted in through a window the music broke off like a snuffed-out flame. A sudden, palpitating silence fell over the small group of men in the room.

Then one of them cried, "A man! It's a man!" A half-breathless murmur of amazement and incredulity burst from the lips of the others.

Quickly Vastine settled to the floor, slid back the opening in the globe, and stepped out.

"Yes, a man," he said. "I come with a message from the Brain. He bids me inform you that in the very near future a swarm of meteors will strike the Earth; the water will withdraw, and the monsters will be destroyed. He bids me say that your only safety lies in descending as deeply as possible into the heart of your tower, where you may escape the fall of meteors from the sky."

A swift hush had fallen over the group at Vastine's first words; but now they burst into a frenzy of questioning. Their voices mingled in a strangely musical hubbub of excitement.

Suddenly one of them began to sing, a lilting melody sung to a queer bit of improvised verse:

In an instant the entire body had joined in singing and the room was filled with the sound. With a grimace of distaste, Vastine reentered the spiked globe preparatory to leaving. They paused long enough in their singing for Vastine to repeat his warning; then he drifted out through the window and sped toward the Tower of Business. For a few moments he could hear the song drifting after him: "Prais'd be the Brain!"

His visits to the two remaining towers were without incident; a comparatively short time after leaving the Science Tower, he was returning. Reaching it without mishap, he darted into the lighted chamber—with the coming of darkness it had automatically illuminated itself—flashed down the shaft, and entered the room that now housed the Brain.

There, at the direction of the Brain, he yielded his mind to it, and actuated by its superior will, moved the mass of apparatus to one side while the slabs closed the shaft, then replaced it in the room's center. When control of his senses was returned to him, he knew nothing of what he had done, except that it was done. But he was conscious of the dragging weight of a terrible fatigue.

Wearily he relaxed on his bed. There was only one thing to be done now—he must await the coming of the meteoric swarm.

During the days that followed, a change came over Vastine—a subtle change, one that he himself did not recognize—but nevertheless a definite metamorphosis that made of him a new man. The solitude was responsible for it. Alone with the Brain and the motionless monster across the room—that, and the constant thought of the Brain, himself, and the future. He had to think of something beyond the room, he told himself, or sight of that ghastly, scaly thing before him would drive him mad.

After the recession of the water—what? Would he continue as the attendant of the Brain, always obeying orders, to have no thought of his own? The prospect didn't seem very attractive. True; the Brain was a worthy leader—but what could it accomplish without him, Vastine? *He* had enabled the Brain to flee from the meteoric swarm, had he not? After all, the Brain, despite its wisdom and know-

ledge of future events, must have a physical being through which to act. Up to that time, since the death of his parents, he had been the Brain's body—but what of the future?

The Brain would probably rule the surviving remnants of the human race after the waters were gone, as it had before—through him possibly, since no other possessed as much scientific knowledge as he.

But why should he not rule without the Brain? Like a flood of brilliant light the idea came to Vastine. His mind and heart quickened at the thought. Why not? Supreme ruler! If he could be ruler *with* the Brain, why not without?

It was the birth of ambition in the mind of Vastine. Gradually it became an obsession, this thought of ruling—and because his mind had never been particularly strong, it gave way under the strain. He became a monomaniac. Musing on the thought of his future power, he passed through the days that preceded the coming of the meteor swarm.

CHAPTER VIII

Vastine's Revenge

AND finally it came. Vastine was awakened from sleep by a dull, rumbling sound that seemed to permeate the air all about him, a heavy shuddering of the walls and floor as though the building shook with fear. A momentary lull—then a deafening crash, followed by a series of minor roars and rumbles revealed that the tower above him had been the target of a heavenly missile. After that, the thing was incessant. In spite of his distance from the actual meteoric bombardment, and in spite of the vast pile of masonry that lay between him and the decomposing water, he could hear the groan of falling buildings, the thunder of crashing meteors, the roar of steam and exploding molten matter. All this came with comparative faintness, but it was nevertheless terrifying.

Outside, it must have been a tremendous spectacle—a deluge of fire balls from the heavens—but Vastine could only imagine the outside.

For three days and nights, so the Brain told him, the shower of meteors continued; then as Earth passed through the heart of the swarm, it dwindled rapidly, until by the end of the fourth day the last straggler had fallen, and Earth was free!

Trebly free! Freed of the meteors, freed of the flooding waters, freed of the marine monstrosities that had started the trouble in the first place!

Then at last there came a day when the Brain told Vastine that it would be safe for him to open the portal and go into the outside world. He had been awaiting permission to leave the place ever since the Brain had told him that Earth had passed through the meteors; eagerly he grasped the opportunity.

The curved metal door of the room had not been opened for centuries; it did not open easily now, but finally after strenuous effort on the part of Vastine, it slid aside. A sudden rush of water almost swept him from his feet—water that had gathered on the sloping runway that led into the pit in which the great dome lay. Vastine staggered, then regained his footing, and after seeing that the floor was only covered to a depth of a few inches, he continued through the doorway.

Everywhere was evidence of the effects of the water. A heavy, viscous scum covered the floor; strange sea plants grew all about in wild profusion, though now they were withering and dying. Thick, green slime hung from the walls. Here and there lay the remains of dead creatures of the sea. Many days would pass before the lower levels would be habitable, thought Vastine.

Finally he came to the end of the hall, passed through a wide, high-ceilinged room, and stepped out into what had once been the freight level of the civilization that now seemed so remote. And as he gazed about, a gasp of horror burst from his lips. He had had no real conception of the extent of the destruction.

On every hand were the marks of the searing, liquid fire, the battering, corroding sea, the crashing meteors. Segments of broken buildings hanging perilously, sagging like drunken things; dangling girders from twisted, aerial bridges; decrepit, tumbledown wreckage of formerly majestic architecture—an ugly, battered skeleton of a city! And everywhere hung the inevitable sea slime, the marine flora; and everywhere were rotting carcasses of hideous creatures of the deep, befouling the atmosphere with their fetid odors.

Spiked globes, too, he saw, with their monstrous cargo of dead, scaly flesh. And there were other things, half-consumed bodies that had once been men and women, human skeletons hanging hideously from twisted ruins—Vastine tried not to see them. But death, complete and terrible, was on every side; it could not be avoided.

About to turn back, his nerves shaken, sick with horror, Vastine paused at the sight of what he thought was motion some distance away. He watched tensely—then he was sure. Men were approaching! Men, fighting their way slowly through the miasmic slime and filth. They must be refugees from one of the towers.

Eagerly now he watched their approach—for these were to be his subjects, were they not? Of course! His subjects—come to thank him for deliverance!

When they had almost reached him, he drew himself up in what he imagined was the posture of a ruler, and waited. An instant later the body of slime-bedaubed men halted before him.

"Boy," a pompous individual in the lead exclaimed, "where is the Brain?"

"The Brain is inside . . . But—but don't you recognise me? I am the man who told you of the coming of the meteors." He emphasized the word "man."

"Yes, yes," the other replied, brushing past him, "But we seek the Brain; we need guidance, a leader."

"I'll be your leader," Vastine cried.

A short laugh burst from the men, and without paying further attention to Vastine, they swept into the tower.

VASTINE'S face grew crimson; then it faded into a chalky white, and a look of dogged determination came into his eyes. He *would* be their ruler!

Those had been representatives of the business men; he'd wait for the musicians, the artists—they'd remember him.

But the representatives of the musicians came, some singing their maddening song, "Prais'd be the Brain," and they would have none of him. They sought the Brain. And the artists, when they arrived, similarly ignored him—like the others, they sought the Brain.

And Vastine drew sullenly back into a remote corner

of the Science Tower, and with his mind that was not quite normal, he brooded over his fancied grievances. He, the rightful ruler of Earth's human survivors, had been ignored, had been scorned! Without exception, they had flocked to the Brain. And since the Brain was the cause of his being rejected by the men from the towers, the Brain must die! He would show them who was the more powerful! That very night he would destroy the thing.

Anxiously he waited for darkness. There would be no light to betray him then; the lighting systems had not survived the deluge. And none would seek to bar him from the Chamber of the Brain, for was he not its attendant? As for the lights in the room—they could be extinguished from the outside if one knew how—and he knew.

Ah, yes! His plan was feasible—it could be carried out with ease. He had but to move stealthily through the utter blackness of the hallway, extinguish the light in the room, then creep silently into it, toward its center, and crush the crystal sphere with a metal bar—and the Brain would be destroyed!

Then they'd have to concede that he was master!

And when darkness came he put his plan into effect. Though he was not thoroughly familiar with the long hallway, he traversed it without mishap, the latter half of the journey in darkness, since he had extinguished the light in the domed chamber. He paused at the top of the short runway that led into the room of the Brain. Then he descended, his feet swishing almost inaudibly through the water—and he was in the chamber!

Cool, cool, he must remain cool—yet Vastine could not keep his breath from quickening, and he felt his heart thudding violently in his breast. Gripping his metal bar nervously, he moved stealthily toward the Brain.

Would he never reach it? With almost childish petulance the question came to him. He had been moving forward endlessly it seemed, yet he had touched nothing. If only there were some sound to guide him! But the mechanical body of the Brain functioned silently—there was no sound. And—and it was so utterly dark! Not that he feared darkness—that was absurd—it was only that it made his task more difficult. Yet for some strange reason his throat was dry, his tongue clove to the roof of his mouth, and a spasmodic trembling shook his body. He—he'd be glad when this night's work was done!

Ah! His outstretched hand touched a length of metal tubing. A little farther over now—and he felt a smooth, curving surface at his fingertips. He had but to raise his bar—and strike . . .

What was that? Involuntarily Vastine staggered back a pace. His heart seemed to have stopped. With a curious fascination of horror he stared through the blackness. Two strange lights glowed over there—two glaring discs of phosphorescent, crimson fire! They seemed to stare—filled with a madness of hate—or was this some ugly phantasy that he was dreaming—some nightmare conjured out of the blackness?

No! No! They were real—were coming nearer—nearer! He felt his face muscles tighten. He fell back another step, then halted, a curious paralysis creeping over him. Eyes—that's what they were—baleful, hungry eyes—eyes of crimson flame—devilish eyes that were fixed on him with terrible intensity. Eyes—of what?

Then abruptly, in a wave of horror, he knew. They were the eyes of the monster that the Brain had driven from the globe, the monster that he had kicked across the room—and now it had come to life, revived by the water, probably—and it—it was creeping toward him! He heard it splashing through the water, heard the rasp of its scales against the floor. He shuddered.

He—he'd have to get out of here—but the dreadful fascination held him motionless.

Suddenly by the light of those terrible eyes he saw a writhing, slithering tentacle . . . There were others . . . The place was alive with them—snakelike things that waved sinuously in the air. They were feeling out—feeling out everywhere—*for him!* He lashed out with his weapon, felt it torn from his grasp! He screamed madly as a scaly arm rasped across his cheek; staggered back; overbalanced; and collapsed with a great splash into the water.

Only an instant he lay there—it couldn't have been more—yet in that instant a heavy weight had leaped upon his chest—those eyes were directly above him, glaring hideously—and that forest of tentacles was twining about him to crush out his life!

Vastine screamed, and screamed again. In a frenzy of fear he tore at the contracting bands that were burning into his body—tore and tore and tore—and screamed again. Then a writhing cord encircled his throat—and only an ugly, choking cough came forth.

Steadily his struggles grew weaker. His entire body was held as in a vise—and a searing, burning pain was eating into his breast. His throat was on fire, and his mind was aflame with a thousand agonies.

Slowly, slowly all was fading. He, Vastine, was dying; dully he realized it. And then the Brain sent forth the last thought that Vastine was to receive. Unintelligible in part, yet strangely horrifying, it flooded his mind.

"Dying, Vastine? You have to die. You—and the others like you. You sought to destroy me—but you are being destroyed. And I live. Justice—only justice!" And there followed a thought of boundless mirth—the Brain *laughing* amusedly!

Then blackness, utter blackness, merciful blackness cut off his thought, his life . . . Vastine the Attendant lay motionless in death, while a horrible monster squatted on his body.

THE sagging body of Dr. Leo Kozarek stiffened; he straightened slowly. He saw a faint glimmer of light piercing the oppressive blackness that lay upon his mind like the folds of a pall. A glimmer of light—but that light seemed loath to become more than a glimmer; his mind seemed numbed, to be waiting somehow for the return of consciousness. Was this consciousness that was returning, this dull, monotonous pain? Was it that deadening fear that was urging up in his thoughts? Or were they merely the results of returning consciousness?

Slowly his brain cleared; and as it did so, his eyes, widened with dread, fixed themselves on the Brain. His body, sinking back, cringing, trembled. And his mind, when the last stupefying veil of unconsciousness had gone from it, dwelt on his fear, the Brain—and himself.

It was diabolic, the manner in which the Brain had worked to accomplish its purpose; and that purpose was the complete control over his, Kozarek's, mind and will.

Those visions of his existence in the future had been given to him with the sole thought of permanently bending his will by suggestion to that of the Brain. And though he knew this to be so, though it seemed to be an unquestionable fact, he could do nothing about it—for his will was already subject to that of the Brain; his mind was not his own!

If only there would be no more visions; if only he could avoid seeing any more of the future—then perhaps he could regain control of his will! But he placed no hope in that; the Brain would follow up its advantage.

And at that moment in answer to his unspoken thought, a message came from the Brain. Behind the thought seemed to be a cold, hard, triumphant note.

"One more vision, Kozzarek, only one! Vision of the world of the remote future when Man is approaching the nadir of his decadence. Vision of yourself in that world as Koz, the Demented, Koz, the Outcast!"

With a superhuman effort Kozzarek aroused himself from the numbing apathy that held him. "No! no!" he cried in a voice that was quavering, dominant with terror. "No more—I—can't bear it! What have I done to merit this ordeal; why must I experience death again and again? Be merciful!"

He fell to his knees and raised his ugly face in pitiful supplication to the machine, the mass of grey matter in its crystal sphere.

"Mercy!" Scornfully the thought came from the Brain. "What mercy did you show to John Ovington? You robbed him of his discovery, his reputation, and finally his life. You showed no mercy to Ovington; I, the Brain of Ovington, can show you no mercy. Justice—only justice!"

Kozzarek's face was gray and drawn when he arose. His shoulders sagged, and his entire body seemed to be drooping. Listlessly, at the command of the Brain, he sank into his chair. And then, for the third time his mind seemed to merge with the Brain; the laboratory vanished; the throbbing of the motors in the apparatus of the Brain ceased; and Kozzarek, in thought, lived as Koz, an outcast of a future world.

CHAPTER IX

Koz, the Outcast

A SMALL, ugly, misshapen figure crouched beneath the shelter of a twisted mass of corroding metal, half-concealed by luxuriant vines and creepers—metal that, centuries before, had formed a great aerial street over which countless human feet had passed. Close-set, little eyes, alight with hate and fear, gleamed in the crouching man's face. Furtively, those eyes darted here and there, searching—and suddenly they saw that which they sought. Men, twelve, fifteen of them, were rapidly forcing their way through the tangled thicket forming a roughly defined road that had once been a wide thoroughfare—men, the Priests of the Mighty One!

With a muffled curse, Koz the Demented turned and wormed his way deeper and deeper into the wilderness.

Steadily, incessantly, the thought beat at the mind of Koz: what a fool, what an utter fool he had been! If it had not been for his folly, even now he would be safe in the midst of the Clan, rather than a miserable fugitive, fleeing into the beast-ridden jungle. He had blasphemed against the Brain, the Mighty One, the god of the Clan, so they said; and the Priests had tried to seize him. He had escaped, but now they were on his tracks.

He *had* blasphemed, according to their ideas, for he had said that the Brain was a creation of Man. But—the thought asserted itself doggedly—his statement was correct, and they were wrong! There was nothing divine about the Mighty One; somehow he knew it was so.

Suddenly the reverie of Koz, as well as his forward progress, ceased. A few feet before him a huge pile of shattered masonry and debris blocked his way, rising to meet the towering wall of a great building—a wall now blotched as with leprosy where masses of stone had fallen away from the steel framework. To left and right it extended, cutting off his escape—to left and right, meeting those other walls between which he had been moving. The way was blocked; he could go no farther!

Like the demented creature that men said he was, Koz tore through the thicket. The length of the barrier he dashed, and back again; but there was no way of escape. Suddenly his strength seemed to desert him, and he sank to a seat on a huge, fallen girder. And there the Priests found him, an expression of dull resignation on his face.

Back over the way he had come, they led him, through the matted undergrowth, until they reached the inhabited part of the gigantic, ruined city. Here, too, were signs of ruin and decay, but the lower stories of the buildings had been repaired, the streets were clean, and throngs of people moved about.

As Koz and his captors entered the throng, a chorus of derisive jeers greeted them. Small boys ran before them crying in their shrill voices:

"Here comes the madman! Crazy, crazy Koz!"

And Koz with lowered head, looked neither to right nor left. But in his heart there burned an undying hatred for the race that scorned him; a fire of rage smoldered in his mind.

In a comparatively short time Koz and the Priests halted before a great tower whose shattered top lost itself far up in the clouds. As though a rebuking hand had been clapped over their mouths, the screaming children fell silent. Quickly they dispersed. For this was the Temple, the dwelling place of the Mighty One, the Tower of the Brain.

Bowing before the building, the Priests deftly described certain ritualistic signs with their fingers. Then after removing their sandals, they raised Koz, and in spite of his protests, bore him into the tower—bore him, for they dared not let his feet walk on holy ground!

In the room they entered, they were greeted by a tall, thin man with little, ugly eyes—Sweig, the High Priest. At sight of Koz his thin lips twisted in an eager leer.

"You have him already!" he exclaimed in a voice as dry as the sound of two dead branches soughing against each other. "Soon, if the Mighty One wills, we may see brother Koz climbing the Pillar of Fire . . . But come, the Mighty One awaits."

At the mention of the Pillar of Fire, the face of Koz grew pale. He had seen men climb the tall, metal pole with tongues of flame leaping hungrily after them—climb higher and higher with the flames drawing steadily closer, until they had crashed to earth, living torches. Crashed, and died. For an instant he contemplated attempting to

escape; then he realised that his efforts would be futile. He remained passively in the arms of the Priests.

They were moving through a long corridor; it seemed endless. Koz knew that they were approaching the great domed chamber that held the Brain. His heart-beat quickened. Only twice before had he seen the Mighty One; once when as a boy he had accompanied his father, and a few days before when he had been admitted by the Priests. It was after the second visit that he had blasphemed.

They had reached the domed room now, and paused before the door. Again the fingers of the Priests made their signs; and Sweig said slowly:

"The Priests bring Koz, who has blasphemed against the Mighty One. They desire to consult the Master concerning his fate."

FROM within the chamber a voice replied, "You may not enter; the Master will not see you." It was the watcher, the attendant of the Brain, who was always there.

Before the High Priest could voice an answer, the thought of the Brain entered the minds of all of them. "I know of the offense of Koz; and I know him. He shall be cast out, separated forever from the company of men. He is to be blindfolded and bound, and four of you shall lead him far beyond the edge of the city to a place I shall show you. There leave him, bound and unarmed to await his death—unless he can release himself." The thought ceased.

A disappointed expression crossed the face of the High Priest, to be banished quickly; and the men turned and retraced their steps through the corridor. Upon leaving the building, four of the Priests took Koz, and after blindfolding him and binding his hands behind him, as the Brain had directed, started toward the edge of the city. At length they entered the thicket.

For Koz there began a seemingly endless struggle through the thick, almost impenetrable undergrowth. The Priests led him, but they exercised little care; branches lashed him, outjutting roots and tangled vines caught at his feet. Cries of protest burst from him at first; but the Priests only mocked him, so he gritted his teeth and bore his torment in silence.

Several hours had passed when Koz and his captors came to an abrupt halt. One of the Priests spoke.

"Here we will leave you; it is the will of the Mighty One."

Roughly they cast him to the earth; he felt them lash his feet together. For an instant he struggled, but to no avail. His only reward was a brutal blow that set his head to ringing, and that numbed his senses.

And when his faculties had fully returned, the Priests had gone. He was alone.

The sudden realization of his position momentarily shocked the mind of Koz into immobility. Sluggishly his thoughts came; his brain seemed to be groping in the dark, trying to grasp the full significance of all that had occurred. Knowledge broke upon him like a flood of light—and a great sickness of heart smote him—and mingled hate and fear besieged his mind.

Alone! Bound hand and foot—and blindfolded so that he could not even see the approach of peril! And the tales men told of the beasts of the wilderness; monsters, gigantic, horrifying! He had never seen any of them himself—but there was much that he had not seen.

Cold sweat broke out upon his forehead. What if one of the beasts were approaching now! He listened intently—heard a faint, rustling close at hand. A tremor shook him from head to foot, and a scream of terror leaped to his lips—a scream that he did not utter, however, for fear stopped his mouth. Perhaps no monsters were near, after all, and his cry might summon them!

He must free himself—at once! Only thus could he escape the death that seemed so imminent. He began struggling furiously with the cords that bound his hands. From side to side he rolled, exerting all his strength, but his bonds held.

Koz's struggle had one effect, however; something of a vegetable nature crunched and squelched beneath his twisting body, with a semi-liquid sound. And the air became polluted with a heavy, concentrated stench, suggestive of dead flesh long in the clutches of decay.

Koz gagged and choked, and redoubled his efforts to break the prisoning cord. Not for long, he knew, could he breathe that terrible odor, and survive.

And suddenly his hands were free! The cord itself had held, but the knots, carelessly tied, had given way. With a single motion he tore the cloth from his eyes and stared around. His heart leaped. No monster was in sight.

Quickly he freed his feet and arose. With a single, sweeping glance he surveyed his surroundings; then turned and fled. In a few moments the charnel odor had been left behind.

At a safe distance Koz turned and studied with greater care the place he had left. It was a forest—but a forest totally unlike any he had ever seen. The trees were mere slender, pale-green stems, shooting upward to great heights, surmounted by feathery tufts of leaves from which which hung long fronds of purple blossoms. Countless vines, gorgeously abloom with vivid flowers, twined about the slender trees. Here and there, huge, knotted masses of ugly, fleshy crimson reached skyward, ugly growths that thrust aside vines and trees alike in their groping toward the light.

But none of these had caused Koz to flee from the strange place. His had been a revulsion, a horror of the great variety of squat, mushroomlike things—violet, blue, yellow, orange, that covered the ground between the other flora like a discordantly colored carpet—and the all too numerous "death-traps", carnivorous plants with great, gaping orifices in their sides, like hungry mouths from which writhed long, purple tentacles, curling and uncurling incessantly. He had crushed some of the fungi in his struggle for freedom, liberating the terrible stench; and his rolling had carried him almost within the reach of an eager tentacle. But now he was free of that danger.

SLOWLY he turned away with the intention of putting greater distance between himself and the wild scene—and abruptly in mid-stride he halted; and an expression of bewilderment settled upon his face.

What—what was this that had seized his mind? A thought of mirth, boundless, riotous mirth! It jarred and jangled insanely through the cells of his brain. Then came a telepathic message, a thought that was not his own:

"You are free now, Koz, are you not? Then why do you tarry?" And again the tumult of silent laughter coursed through his mind.

Koz cursed angrily; impatiently shook his head. Was he going mad—thinking so disjointedly? For that matter, why was he delaying? It must be that strange forest with its insane anarchy of coloring that was affecting his reason.

He essayed to move, but his body would not obey! A numbing paralysis gripped him.

Solemnly, grimly, now, another thought came. "The Brain is speaking, Koz, so heed!" It was as though a voice had whispered in his ear; yet he had heard nothing. "You are free in body, but you cannot move, for your mind is my slave—mine to do with as I desire! Slave of the Brain, the Mighty One!"

The Brain! Communicating with his mind across the miles of wilderness! The face of Koz grew hideous with a panic of dread.

Then slowly, inexorably he felt his will weakening, and felt all strength of mind oozing from him—drawn away by the will of the Brain. Vaguely, only half recognized, the thought flickered in his consciousness: now was he slave indeed! Flickered—and was gone—and with it, all thought.

"Speak, Koz; are you not my slave?"

Weakly his lips twitched. Dully, in a colorless voice he replied, "Yes, Master, your slave."

"Then obey my will."

Like an automaton Koz turned, and with steady, unfaltering stride, moved toward the brilliantly-colored forest. Without hesitation, eyes facing directly ahead, he stepped upon the carpet of fungi, ignoring utterly the stupefying stench. He passed within a foot of an eagerly reaching tentacle, but he gave it no heed. It was as though his mind and body were so completely under the control of the Brain that he was totally oblivious to all extraneous things.

On and on, deeper and deeper into the unearthly wilderness Koz strode, moving ahead mechanically. Time after time he escaped death by a hair's breadth; the power of the Brain guided him past the vegetable destroyers that sought his life.

After an indeterminable time Koz paused; and with startling abruptness the control of the Brain was withdrawn. To Koz it seemed like the awakening from a deep sleep—awakening in a nightmare world! He staggered wildly, caught himself, and stared around; an incredulous gasp burst from him. An instant he stood rigid; then he sank weakly back against a huge rock.

He was in the heart of the rainbow-hued jungle, standing on a rough, jagged hemisphere of stone that reared its head above the surrounding thicket like an island in a sea of verdure. At the very edge of the rock the carnivorous death-traps grew; and beyond them Koz could see other strange plants that might likewise constitute a menace to his safety. He was trapped—led to this place by the Brain, and left there—to die!

Suddenly he cringed. A thought had come—from the Brain:

"I'll leave you now, Koz, to your own devices. Here you can meditate upon my divinity—or lack of it—and perhaps you may recall some of the distant past—may remember the justice of the Brain! If you wish to leave this place, you may do so; but I believe you will be—safer here!"

And with the cessation of thought, Koz knew that the mental presence of the Brain was gone.

CHAPTER X

The Justice of the Brain

SLOWLY his self-possession returned. He remained standing there motionless until his self-mastery was complete; then he turned and climbed to the top of the bald mass of stone. If there was a single way of escape, he intended finding it. But there was none; on every side as far as eye could reach lay the alien wilderness. Only by plunging into that trackless waste and fighting his way through it, could he hope to gain freedom. His face paled at the thought. The terrible odor of the fungus growths still clung to his clothing; he had no desire to tread again on the reeking things.

Koz realized at that moment that dusk was falling. The reddening west gave evidence of the approach of night. Night—when beasts prowled abroad through the jungle—so men said. Night, with all its hidden horrors! Koz could not know that the deluge of six centuries past had blotted out all animal life save Man and a few of the smaller animals that could swim, and had remained alive on masses of floating wreckage.

Through the gray of dusk, into the blackness of night, Koz waited. He could do nothing else.

Slowly time passed; and as the minutes dragged by the imagination of Koz began to work—even as the Brain had known it would. The deep, purple shadows creeping over the wilderness so stealthily, seemed to him to be the hiding place of countless terrifying shapes, monsters that even now might be crouching to leap upon him!

Deeper grew the shadows, more oppressive became the blackness. The sky was overcast, heavy with clouds; the darkness seemed to become tangible to the touch. And, with the deepening night, twilight crept upon the darkening mind of Koz.

His thoughts gradually lost all semblance of order—even his terrors became disjointed things. He grew aware of a fearful sense of isolation, a horrible, haunting sense of insecurity. A horde of ghostly shapes were rising up out of the blackness to plague him with sinister possibilities. He closed his eyes to shut out the sight—and hastily opened them again, lest some horror leap upon him, unseen.

Suddenly Koz bent forward, listening. Faintly, scarcely audible, there came a curious, swishing sound. It was only the rustle of the plumelike leaves of the slender trees swaying under the weight of a sudden gust of wind—but to Koz it signified the approach of an indescribable monstrosity. He whirled toward the sound . . . Only the impenetrable blackness lay before him.

A brisk breeze had sprung up, and in an instant the swishing sounds assailed him from every side. Suddenly Koz, in a moment of lucidity, realized the nature of the noises, and laughed—and shuddered at the rasping, unnatural, mirthless tones. Then the sea of mental torment closed over him again, and all those visions that plagued him, and all the sounds that beat at his brain had returned, gnawing like rats at his dying reason.

Up to this point the mental torture of Koz had seemed

cunningly just to skirt the border-line of strain that he could endure, just to stop short at the breaking point—but suddenly that border-line was crossed. Koz, peering wildly into the blackness, saw rising up before him a vast, formless cloud of grey vapor, filling half the sky, a cloud that contracted slowly until it resolved itself into a gigantic vision of the Brain in its crystal globe! Each convolution of the ghastly thing, increased in size a thousandfold, was clearly visible, silhouetted against the pitchy blackness of the night.

And suddenly into the mind of the man there rolled a thunderous voice, cold, harsh, mocking: "Crazy, crazy Koz! Crazy, crazy Koz!" And there followed a wild peal of laughter, an insane, abandoned crackle.

And Koz, wild-eyed with insane terror, his lips drawn back over clenched teeth, glared for an instant at the vision—then he threw back his head and roared in unhinged glee—roared and shrieked and howled with mad mirth—roared even after the vision had gone. For the mind of Koz had sunken into the gibbering realms where reason tottered and was lost!

Minutes later, when his mad laughter had subsided, he squatted on the top of the rock, glaring into the blackness of the wilderness. His deep-set eyes glowed with a demented light, burning like live coals. And there he stayed throughout the remainder of the night.

Not until the sun was well above the horizon did he stir on the following morning. Then abruptly he sprang to his feet and croaked the single word:

"Thirsty!"

As suddenly as he had arisen, he dashed down the sloping side of the mass of stones, into the jungle.

The tentacles of the death-traps tore at him as he passed; clouds of noisome odors arose in his wake from crushed fungi; dangling vines strove to trip him. But madman he was; and to him had come the strength that maniacs often possess. Though his clothing was torn from him in a very few moments, though blood poured down his naked body from open wounds, though ugly crimson welts arose on his flesh, nothing seemed to stop him. Twice he fell, entangled in the vines and creepers, and once a death-trap had him in its grasp, but each time he tore loose and dashed on. And at last he passed beyond the edge of the nightmare thicket, into a forest of natural trees and undergrowth.

STRANGELY, a stream of water ran through the woods close at hand—instinct, evidently, had guided him to the life-giving fluid. Again Koz uttered the single word, "Thirsty!" dashed over to the stream, and drank. His thirst satisfied, he arose, smiling vacantly—then suddenly he stiffened. The vacuous smile left his face; the insane light in his eyes dimmed.

"Koz," a voice whispered in his mind, "listen to your Master, the Brain."

"I hear you, Master," Koz replied tonelessly.

"Then heed! That ordeal through which you have just passed was punishment for your blasphemy, your antagonism toward me. For another offense must you likewise be punished. Then will all be finished . . . But now, obey my will."

With the same mechanical stride, the same lack of interest in extraneous things that he had displayed when entering the wilderness of the death-traps, Koz moved rapidly along the bank of the stream. After going about a half mile, he turned away from the water-course and fought his way through the wilderness, moving unerringly toward a strange object half buried in the thick loam of the forest.

It was a crystal sphere, four feet in diameter, with long, needle-sharp spikes protruding from its surface—a globe that had been used by invaders from space six centuries before.

Without hesitation, guided by the Brain, Koz lifted the sphere from the loam, opened it, removed the rotting bones and the queer, metallic scales that lay within it. He entered the vehicle, which, despite its age, seemed uninjured.

An instant later it rose into the air, hovered high above the tree tops, then sped eastward toward the ruins of Cosmopolis.

In a curiously detached way the mind of Koz, its place usurped by the mentality of the Brain, was aware of what was taking place—but he had power to do naught but obey.

In a few minutes the spiked globe descended into the open space before the Tower of the Mighty One—and as abruptly as before, the Brain released the mind of Koz.

Momentarily bewildered, he stared through the transparent wall of the sphere at the awe-stricken faces of the nearby members of the Clan. Then suddenly recovering his senses, suddenly aware of his precarious position, his nakedness, and suddenly wracked by the pain of his wounds, he fumbled frantically with the machinery behind the nearest spike, in an effort to escape. Nothing happened. With a muttered imprecation, Koz drew himself through the opening in the sphere, and sprang to the earth.

"It's Koz!" the amazed cry arose from many throats. "Koz," someone said, "and look at his body—naked and a mass of wounds!" Koz turned slowly. He was surrounded; men hemmed him in on every side.

He heard the voice of the High Priest. "Hm-m—Koz, returned to climb the Pillar of Fire!" But Koz gave little attention to that; his mind was centered on the men who were closing in on him.

His eyes, like those of a trapped animal, roved from side to side. He crouched, his body tense—to escape if an opening came; to fight as a last resort.

Then with sudden surprise he realized that the throng had stopped, that their faces were mantled with wonder. Then he knew why, for to him had come the thought of the Brain.

"Let be! I shall attend to Koz!"

Then to Koz alone came the thought, "Look behind you, at the globe!"

He whirled—and fell back in stark amazement. For there in the globe was the Brain, floating in its green liquid! And the spikes were gone from the thing—it was the crystal sphere of the domed chamber, the crystal sphere unaccountably grown larger! . . . But—but this could not be; it was a trick of the imagination; it must be that!

"Imagination? Is this also imagination?" With the thought from the Brain, the sphere arose into midair and hovered above Koz's head. Then slowly, slowly, the Brain began to expand, began to increase in size like a huge bubble; yet it had not the tenuousness of a bubble.

Wide-eyed, Koz watched its leisurely growth—and dully

(*Continued on page* 182)

MASTER OF STORMS

By **Edwin K. Sloat**

(Illustration by Paul)

An agonized scream filled the air above the roar of the storm. A blue flash leaped from the short-circuited switches through the torturer's body.

The Master of Storms

by the author of "The World Without Name," etc.

THE tiny avian slowed its swift westward flight in the darkness above the Arizona desert as Harry Allard moved the control lever. He changed the form of the artificial feathers of the wings so that he nearly closed the little vacuum pockets created by the wind which Nature kept trying to fill with air. He succeeded thereby in hurling the tiny craft across the sky at three hundred miles an hour.

Allard glanced at his self-winding wrist watch. Fourteen o'clock, or, as the ancients measured time, two hours after midnight. The boys with their radio-motored trucks should have arrived by now. He glanced back, searching vainly for the lights of that big craft that had fallen in behind him shortly after he left Louis City. The night sky revealed nothing. He grinned to himself, and patted the side of the avian affectionately. She left no magnetic field of motors to be trailed. His own electro-warning indicator showed only three moving bodies, all beneath him. Undoubtedly the trucks.

Down he swooped like a great timber owl, and started to wheel in great, silent circles at twenty miles an hour, a thousand feet above the desert. All land-marks, the mountains against the gemmed heavens and the pointer on his earth induction chart showed that the cabin must be directly beneath him.

Ten impatient minutes passed. No sign of the trucks. Black light signals, of course! With an irritable shrug at his own tardiness in thinking of them, he jerked a pair of octrahedral spectacles from their pocket on the control board and slipped them over his eyes. Immediately four lights set in a square on the ground below could be seen. He dropped the avian swiftly toward them, started the tiny motor that spun the helices, and eased down lightly as a feather into the prepared square.

EDWIN K. SLOAT

LEST our readers feel that some of the developments of future science put forward by our authors are mere brainstorms, we offer the following despatch in the New York Times from Moscow. "Experiments," said the article in part, "had discovered a method of precipitating moisture from the clouds, either in the form of rain or snow or by means of electrical ionization . . . if they prove successful it is the intention to establish a chain of stations around Moscow for snow precipitation in Winter. Before clouds reach Moscow they would be ionized and the snow would be made to fall on collective farms, where it would be useful in covering the Winter crops and in preparing soil for the Summer."

The possibilities offered by this control of our climate are enormous. They could affect every part of our lives. There is little doubt but that such control will eventually come; and when it does the startling series of adventures pictured in this story will probably become realities.

A group of men materialized out of the darkness about his ship. Grimly he drew his ray pistol. If he had been tricked—. Then he recognized the voice of Jukes, his chief laboratory assistant.

"The three trucks are here, Harry. Everything is ready. All we have to do is to put out the molecular vibrator, and hook up the Bostron tubes. I had a lot of difficulty with the inverse aerial. Finally ran it along the fence in the form of heavy mesh wire. Luckily none of the Workers live nearby to investigate."

Allard nodded to himself. This portion of the desert had been selected as the key position of the great experiment on account of its particularly grim, inhospitable character. No less than sixteen persons had either starved to death or succumbed to the heat within a radius of three miles of the deserted shack that stood nearby—which in itself was enough to keep the unfortunate Workers from settling here.

"How about the seed, Jukes?"

"We have several truckloads stored in the mountains," was the prompt answer. "Mostly Quicklive wheat which will take root and thrive on bare ground regardless of temperature extremes if it has sufficient moisture."

"Good!" exclaimed Allard. "I have been so tied up with the legal end of this business I couldn't keep track of these details out here. Now to work! Remember that we are literally in enemy territory. President Holan, of the Workers' Assembly, has roused the Workers, and they'll end us and my rain-making machinery together if they catch us. However, the apparatus is all well concealed for a time at least. Strange how perverse humanity is! Even though these people should know, as they have been told, that we are trying to help them, they blind themselves to the benefits and want to kill us, so that the artificial production of food will not be interfered with. Of course, the Cities will benefit, too, but both Ebenezer Throstle, whose millions are financing this thing, and myself decided to help the Workers who want to permanently settle on the land.

Armed guards slipped away into the darkness. Allard and Jukes and their trained laboratory workers swiftly unloaded piece after piece of apparatus from the trucks and placed them in previously mapped-out spots about the abandoned shack which was to house the controls. When they had finished, the landscape—had there been daylight to show it—presented no different appearance

than before. The huge molecular vibrator, however, a solid, lasting thing of rustless steel and few working parts that would function for years without further attention—sprawled over more than three acres of ground, concealed from the air by cactus growths.

"We're all set, men," said Allard crisply. "This is the last station, the strategic point of the chain. The others clear down to the Gulf of California are ready to function. Jukes, you had better keep one of these trucks. If you are discovered and have no chance to escape by air, you will have a better chance to escape to the mountains, and send us an SOS. Take the other trucks out of the country.

THE men hesitated, a bit awed by their part in this attempt to change the natural forces of the world.

"Are you planning to use the moisture already in the air, or are you going to bring in fresh air?" asked one of the men.

"Bring up fresh winds from the ocean," explained Allard. "There is, according to our tests, sufficient moisture in the air already here to cause fair rains, but not enough to furnish the amount of water we need. So we have set up a pass ten miles wide at the edge of the Gulf of California between Bunsetter dead atom screens—the transparent, molecular barriers to air movements, you know. We'll cause precipitation by other screens slanted across the path of the wind which will throw the air upward and cool it. Later we may—what's that?"

The men strained their ears. Far in the distance sounded the indistinct drone of air propellers in the night.

"Douse those black lights!" ordered Allard tersely.

The sound became more distinct, and swelled in volume until presently the tense group caught the black shape of a plane outlined by the stars far above the desert. It passed by to the south and bored its way into the western night at several hundred miles an hour.

The men gave a sigh of relief—then jerked up tense and listening again. The mysterious craft was returning, circling far off to the south at greatly diminished speed.

"They're hunting us!" muttered one of the men. "But I didn't know that Workers were allowed to have aircraft."

"They're not," replied Jukes bitterly. "But that is no ordinary plane; it is a battle cruiser from the Cities. I would know the sound of their propellers on my deathbed."

Allard was thinking furiously. What was behind this new menace? There flashed through his mind the memory of the small dark man scribbling furiously in his notebook at the Supreme Court hearing when Allard won the decision over Holan to proceed with his invention—Holan, the radical who opposed everything that promised to affect the Workers in any way. Who was the scribbler? Again Allard racked his brain, and had to give up the pursuit of that elusive memory.

Closer and closer droned the big cruiser, dropping to a thousand-foot level. Abruptly there stabbed down from it the white beam of a searchlight. Allard gasped and spoke rapidly to his companions.

"They're after us! I'm sure of it now, although why they should be is more than I can guess since we hold court permission to proceed with our experiment. I'll play decoy so you can get away with those trucks! I dare not turn on the helices; the motor disturbance would register at once on their electro-detector. You'll have to get a rope and pull me into the air."

A towline from one of the trucks was looped behind the nose hook of the avian, and with the wings feathered to catch the slightest breath of air passing over their sensitive surfaces, the avian went bouncing over the uneven ground. Fifty feet. A gust of wind struck the wings. It leaped like a living thing and shot over the heads of the running men.

Up, up; swifter and swifter! The black pool of the desert dropped magically away. Eighty, ninety, a hundred miles an hour. A thousand feet high and ten miles from the vibrator station. Allard dove to the hundred-foot level.

The big battle cruiser was soaring a scant two miles distant now, whipping the beam of its powerful searchlight back and forth across the floor of the desert among the tiny, deserted Workers' shacks.

Allard switched on the tiny motor, leaving the helices out of gear. He knew the electrical disturbance would register immediately on the detector of the big cruiser.

The response was instantaneous. The cruiser banked sharply about and the white searchlight probed grimly for him. He purposely held to his line of flight so it would pick him up.

Within a moment he was centered in the fierce glare. Now for it! He sent the tiny avian hurtling skyward with every ounce of its growing power. The searchlight clung to him relentlessly. He would have to dodge in a few minutes, or the ray artillery of the craft would blow him to atoms. But there would be the usual warning first—already was, probably, on the radio; but he was not tuned in. Then it came.

"Ground that avian at once, or we fire!" The voice of the mighty loudspeaker boomed in his ears, rolling away across the desert like thunder of the gods to reverberate back from the distant mountains.

AT the sound Allard hurled his ship out of the light beam into the protecting darkness. Down an invisible slope. The rush of wind over the wings rose to a howl. Then the searchlight picked him up again. He jerked the stick. The avian sprang upward forty feet.

At the same instant the mighty ray guns of the cruiser stabbed wickedly, just missing him. Again the safety of the darkness, climbing with rocket-like momentum. The big battle plane swept after him.

Again the clawing searchlight found him—and lost him as he sprang upward again. Crackling death rays filled the air below him. The mountains were close now. Now, over them! The searchlight caught him as he topped the summit, held him in focus just an instant before he dropped down the other side. The little craft shuddered. Allard stared down unbelievingly at a black, yawning hole in the bottom of the cockpit, slashed there by a stabbing ray.

Then he found himself fighting the little craft desperately as it fell out of control. Down, down, yawning wildly from side to side, spinning. He flashed on his landing light.

Tall pines speared up at him from a narrow plateau. He glimpsed an opening between two trees, tried to throw the ship into it. With both arms about his head for protection he waited while the avian hurtled between

the trees, breaking off huge branches and plowing head-on into the boulder-strewn ground. The fierce, crashing impact hurled Allard clear of the cockpit, stunned and helpless.

He opened his eyes to see a blinding light probing down through the trees. With a convulsive effort he dragged himself behind a boulder out of sight.

Down out of the sky dropped the big battle cruiser, and hovered a scant ten feet above the spire-tipped pines with helices whirring. A porthole opened and a man thrust his head far out, peering down. There was something vaguely familiar about the head and shoulders silhouetted against the glow of light inside the cruiser. With a shock Allard recognized him as the small dark man, the scribbler who had hurried from the court room at the hearing.

Another porthole forward in the control cabin opened and a second man thrust his head outside. He swore in astonishment, and pointed down to where the searchlight lit up the wreckage of the avian.

"Harry Allard's avian, Cassillo!" he called back to the small dark man. "I know the craft well. I had no idea he was the man we were chasing!"

A string of vitriolic curses answered him.

"We were supposed to capture Allard instead of kill him, you fool!" screamed Cassillo. "There'll be hell to pay for this! Wipe out the wreckage and his body with it. We'll report him dead. It is all we can do!"

A great disintegrator ray stabbed down from the battle plane, rendering the broken avian swiftly to dancing atoms. Then the propellers roared to life and the cruiser vanished swiftly into the eastern night.

Allard forgot his swimming head, and throbbing, aching body. Cassillo! He might have guessed that the private agent of Councilor Erlanos, head of the Secret Council of the Cities, would "muscle in", as the ancients phrased it, on this attempt of Ebenezer Throstle to alleviate the need and distress of the Workers, who were under the ruthless domination of the Cities and their governing Secret Council.

Allard slumped down. His pounding head would not permit him to think further. He knew he must find shelter, for he was just beginning to realize how seriously he was hurt. Night here on the mountain with its penetrating cold might prove fatal. There were no homes on this side of the mountains, for this was the beginning of the no-man's land established and maintained by the Cities. The nearest possible haven was back over the mountain to Jukes at the vibrator station.

He struggled to his feet, swaying giddily. Then he started. With his first step his toe encountered something and hurled him headlong to the ground. In blind rage he fumbled about in the darkness for the obstacle. It proved to be a small, oblong box. His pocket radio! With a cry of relief he started to open it. No! The call that would bring Jukes hurrying to him must not be given, for Jukes must remain to guard the vibrator. He must go to Jukes.

Resolutely he clenched his teeth against the throbbing agony and weakness and started again.

CHAPTER II

Pursuit!

DAWN found him at the edge of the desert, staggering blindly ahead into the arid, cactus wastes. Then the sun caught him and downed him in the scant shadow of a low rock. In the red mists that fogged his sight and dulled the world one thought hammered at him. A thought of what, He wrestled deliriously with it. Something to help him. Ah, the micro-radio. Quick, quick!

His fumbling fingers pulled out the trim oblong box, unconsciously snapped on the contact.

Jukes, waiting anxiously with ear glued to the tiny ear plates of the set in his lap caught the faint whisper:

"Jukes, Jukes—help—desert—"

"Where, where?" shouted Jukes into the mouthpiece.

There was no answer.

Jukes leaped to his feet. Allard out in the desert, hurt—maybe dying! The heat of the blistering sun. No water. Jukes sprang to the broken-wave sending set, calling madly for Throstle at Cuba. A reply. Things began to happen. Engineers raced to open the huge intake valves of the convection turbines. Bunsetter and vibrator station operators clear down to the Gulf of California snapped to attention. Molecular vibrators began to beat the air all along the way. Mile-high Bunsetter dead atom screens, electronically created and maintained, flashed into being.

A wind began to blow off the Gulf, a wind that strengthened swiftly to half a gale as it swept inland across the desert wastes raising vast clouds of sand and dust. Emaciated Workers and their children crept to the doors of their shacks to witness the miracle that was coming, the boiling clouds of condensing moisture-laden atmosphere, racing past overhead to fill the sky.

Rain! Rain! It poured down on the dusty, arid land, drumming on the desert, soaking the parched earth, sweeping onward to save a lone broken man whose brain had created this miracle.

Jukes wandering frantically in the storm, soaked and hatless, found Allard unconscious on the muddy ground, the life-giving water beating on his face and protruding tongue.

It was three weeks later—three weeks of bursting green life on the desert and three weeks of wondering, exultant labor of the vibrator station listening breathlessly in on a secret meeting of the Workers' Assembly in a mountain cavern far across the desert. One of Jukes' friends in the Assembly was catching the proceedings by micro-radio and broadcasting it to Jukes' receiving set at the vibrator station.

"And now we face extermination—all on account of this hellish rain-making invention!"

The loudspeaker hurled President Holan's impassioned words out into the room. The uneasy stir of half a hundred members in the vast cavern followed. A man cleared his throat.

"But we have food aplenty for the first time in our lives, and instead of a furnace we now live in a pleasant climate—" he began.

"And the Cities want our land!" thundered Holan, smiting the table with his fist. "Their battle planes have been cruising greedily above us day after day, watching the

growing wheat, the numberless vegetable gardens and flower plots you men have planted. Since the rains began, this savage torrid desert has become one of the garden spots of the world—and the coupon-clippers of the Cities will kill us to the last man if necessary to wrench it from us! And all this because of this meddling, dangerous Allard and his rain-making!"

Cries of "Death to Allard and the coupon-clippers," "Robbers", "Assassins" filled the cavern. Holan finally suppressed the mad shouting with the noisy beating of his gavel.

"Workers, you have been misled if you think this Allard has been working for you!" he bellowed. "I tell you that this Allard is a spy from the Cities! Do you not recognize the hidden hand of the Secret Council in this? First we are cheated in the courts when I try to stop Allard legally. The coupon-clippers let Allard go ahead with his wild scheme to see if it would work. But they wanted him to try it in the Workers' territory first. Then if any harm resulted, it would fall on the poverty-stricken Workers and not on the scrubbed and combed estates of the coupon-clippers!"

"That's a lie!" growled Allard aside to Jukes. "Throstle and I both knew that if we tried it first in the Cities and it worked—as we knew it would—the Secret Council would never let the Workers have it out here."

"Now that the device is successful, the Cities will seize this territory! Harry Allard is a menace to the existence of you Workers! He was born among the coupon-clippers in the Cities; his heart is with them! He deserves death!"

Jukes snapped off the loudspeaker impatiently.

"Holan is a fool!" he cried angrily. "A fool and a dangerous man! He makes me ashamed of being a Worker by birth. Those Assembly members are mere rabble for the most part, and he sways them with a word. You make a garden for them out of a desert, and they would kill you for it. Even though you may never have been in sympathy with the Cities, no one could blame you for turning to them now."

Allard, still thin and pale from his injuries in the crash on the mountain, grinned and turned to another radio set beside his chair.

"The Workers aren't the only ones with such ideas about me," he remarked, as he snapped on the current of the receiving set, and pressed a broadcast switch.

THE speaker hummed to life, and presently a deep voice spoke from it.

"CX376Z answering. Give the countersign, please."

"Triple X30. What is the latest news, Arban?"

"Not much change, Mr. Allard. The Secret Council was in session again last night, and talked long over various plans for capturing you, since they are certain now you were not killed in the crash. They are determined to make you operate, or at least show them how to operate the rain-making apparatus. Cassillo is positive he can regulate it once it has been started. He and a group of specialists crept into the Workers' territory about three weeks ago, shortly after the apparatus there began to function, and have made and installed exact duplicates of all your machines.

"It covers the country from Kloma City on the western border to the Atlantic Ocean on the east, and is fitted up to bring down cool winds from Canada in summer, and warm winds from the south in winter. But they have been unable to make it function, sir, and they realize that you protected the device and yourself as well by withholding some of the information about it. Be very careful, Mr. Allard, for they will torture the secret out of you if they catch you. And once they have it, they will sentence you to death for trying to benefit the Workers instead of the Cities with your invention.

"By the way, sir, Mr. Throstle has fled from Chi City and has taken refuge on his fortified estate in Cuba."

"What!" Allard jerked erect and scowled. "Don't tell me he has been proscribed!"

"It is true, sir. We discovered a plot against his life, and he very wisely fled in his air yacht in the dead of night."

"Are you yourself safe, Arban?"

"Safe as ever, sir. But I must discontinue now.

The radio fell silent. Allard turned to Jukes who met his angry gaze with a scowl.

"I believe the Cities are worse after all, Allard. At least the Workers don't want to murder the kindest, most benevolent old man who ever spent his millions to help the underdog. Nor do the Workers torture a man before killing him. But the biggest difference," he added bitterly, "is that the Workers are only being misled, while the Cities have fallen into moral decay."

Allard nodded. He had been thinking a great deal about the Cities, for he realized that slavery—not merely the possible economic type, but the absolute possession of a man's body which had once thrown the United States of old into a bloody civil war—was being seriously considered by the coupon-clippers for the Workers, an entirely possible thing. The flight of Ebenezer Throstle was specially alarming for this reason; for the elderly philanthropist was passionately opposed to the idea of slavery.

"Listen!" Jukes' voice was low, as though he was afraid that the receiving set might possibly carry back the sound of it to the Workers assembled in the distant cavern. He had tuned in the radio again, and a thin-voiced man was making a report.

"—and I have traced Harry Allard to an abandoned Worker's cottage ninety miles northwest of here. Who took him there I cannot say, but I hope to learn the traitor's name before long. Allard must have been badly hurt, for I found the wreckage of his avian in the mountains. We can have him here in less than two hours."

"Good!" roared Holan. "He shall be tried here before the Assembly! Let's have the vote!"

A mighty shout of "ayes" answered him.

Allard leaped to his feet. Jukes protested.

"Do you feel able to fly?" he queried anxiously.

"I'm all right. A trifle weak, perhaps. I have a plan, anyway."

"Fine!"

"I'm going to Cuba and see Ebenezer Throstle. With his monopoly of all the Caribbean Sea convection turbine generators as a weapon, we can dictate to the Workers and barter for my safety. Perhaps we can force some kind of an understanding with the Cities. Throstle will know about that.

"Good!" approved Jukes enthusiastically. "But you'll have to hurry. The Workers have secured some up-to-date battle planes from the Asiatics—probably bartered

garden truck for them—and they'll be here in no time. My avian is in the shed. Come on!"

The morning outside was clear, warm and exhilarating. In the near distance the mountains loomed purple, majestic and cameo-clear against the azure sky. The arid grey and blue of the desert had vanished before the onslaught of thriving green wheat. Far to the southwest a cloud bank raised ramparts of mist, presaging the daily rain that was pulled up from the California Gulf by the rain maker.

THE two men allowed themselves but a glance at the miracle they had wrought as they hurried to the tumble-down shed and hauled out the trim little avian. Allard scrambled into the cockpit and buckled on his safety belt.

"What will you do, Jukes?" he asked, as he switched on the helice motor.

"Disappear," replied Jukes grimly. "I have many friends among the Workers—far more than Holan or the Assembly suspect."

As the avian shot skyward, Allard caught sight of two black dots far to the south above the distant mountains. He nosed the avian into a short, steep dive with wings feathered to catch the greatest momentum of the air pressure.

The graceful flyer responded like a thoroughbred that hurled it up again in a long, speeding climb toward the eastern range of mountains. Allard, crouched low in the cockpit, was tense and worried. Those oncoming planes would scarcely dare to leave the Workers' territory. In that hope lay his only chance to escape.

They were close now—lean, blue craft with knife-like wings, roaring along at nearly five hundred miles an hour. But even this terrific speed could not cut off his escape over the peaks. Allard plunged over the line of peaks triumphantly, knowing he had been sighted, and darted off at right angles, down along the range like a hunted hare along a hedge.

The two huge planes overshot far the wild wilderness of no-man's land before they discovered him, and banked about to take up the trail again.

Allard made the most of his slight advantage. Clouds! How desperately he needed their invisible mists to veil him. But there were none. At least he had one advantage. Without searchlights to aim the ray artillery, the gunners would have no such deadly accuracy as they had at night.

He banked and twisted, ever working farther and farther out over no-man's land. Another backward glance. The planes had vanished! He laughed exultantly. This had been easy—easier by far than he had dared hope for. Now for Cuba! Then he gasped and stared.

A mile away to the right hung a great battle cruiser that had risen from a canyon far below. Faintly he made out insignia of the familiar skyscraper on the hull. A battle plane from the Cities! He swung about frantically. On the left was another cruiser. Others lay ahead and behind him. They had him hopelessly bracketed. It was either surrender or annihilation. He slipped on the radio headphones. Yes, the fleet commander was calling him.

"You will accompany us eastward. At first attempt to escape you will be disintegrated. Do you understand?"

"Yes," replied Allard tersely into the microphone, and obediently swung the avian eastward.

He was thinking furiously, desperately. Whether they recognized him or not he was doomed to death, for he had come out of the Workers' territory in a small flier, and the penalty for an individual Worker owning an aircraft was death. Somehow he must escape!

He had been recognized! He realized it when the fleet commander passed by Kloma City on the western frontier, the place where captured Workers were usually taken, and went on east toward Louis City on the Mississippi River. He realized it with growing hopelessness when he saw how carefully the great cruisers maneuvered in flight formation to cut off the slightest chance of escape.

Cassillo himself was standing in the center of the airport which seemed strangely deserted, when Allard eased the avian down to a feathertouch landing. He grinned crookedly when Allard stepped out of the flier.

"Ah, the sensational young scientist again," he sneered. "The valiant mouse that would defy the tiger. The Cities have a fitting punishment for those who turn traitor to their interests."

Allard glanced swiftly aside. Hopeless! Gunmen, slender little men picked for speed and accuracy with ray pistols, stood all about, coldly alert. Cassillo grinned again.

"You are thinking of certain suicide, Allard," he observed pleasantly. "The boys have a routine for escapes. First the arms, then the legs, after which the still living torso with the head and blackened stumps of limbs rolls on the floor, often conscious and able to answer questions for a little while. If you doubt me, you might make a break for the gate yonder."

Allard's already pale face whitened at the thought. His illness had left him weak, and in spite of his contempt for himself, he could not refrain from shrinking at the thought. Cassillo's ferret eyes caught his involuntary shudder. He smiled unctiously, and moved closer to his prisoner.

"Let us slip down to my rooms on the seventh street level, Allard," he muttered with ill-concealed eagerness. "There you can explain in safety to me what must ultimately be explained, and together we can go to certain gentlemen who demand this interview, and I can help you over the rough spots."

Allard drew back, scarce able to conceal the revulsion that welled up in him at the sight of the smug, ingratiating face. Once in Cassillo's rooms, and the world would never again look on Harry Allard alive.

"No use, Cassillo," he snapped contemptuously. "We may as well go to the Secret Council and get it over with. I'll tell you nothing."

"As you will, fool!" snarled Cassillo. "When you are in the torture chamber you will wish you had never been born. On with you!"

CHAPTER III

The Great Storm

HE thrust his hand savagely into his pocket as they approached the unbroken metal fence that enclosed the airport. Abruptly a hidden panel in the wall slid open to admit them.

Allard knew then why the airport had been cleared of its usual teeming crowds; the Secret Council did not want the public to learn about secret exits. He knew, also, that Casillo had opened the panel by means of a special micro-radio device in his pocket.

They passed through the opening and found themselves in an abandoned alley behind a street of small villas that covered the top of the enclosed city. A mono-wheel car was waiting. They mounted it, guards and all, sitting on the circular cushion in the center with their feet thrust outward. The radio motor inside whined, and they were off.

The little car drew up before an abandoned warehouse on the river front ten miles away on the third street level. The door slid noiselessly open as they dismounted, but before they entered, Casillo bound Allard's hands behind his back, and blindfolded him with a huge scarf.

"No blindfold will be necessary when you come out," he jeered.

Into the warehouse they marched, down a hall, apparently, then descended an iron stairway that rattled noisily underfoot. Presently the scarf was jerked from Allard's eyes.

He found himself standing in a small room with black walls and ceiling. Enclosing the center where he stood was a horseshoe-shaped table about the outer edge of which sat eleven, black-robed and hooded figures. The dreaded Secret Council! Allard shivered in spite of himself.

Close beside him stood an iron brazier on a three-legged stand. The brazier was red-hot and filled with burning charcoal into which were thrust many long-handled irons. Just before it hung a rope from the ceiling with a huge hook at the end of it. There was a stand supporting a tray of surgical knives and scalpels. Beyond that against the inner side of the table was a small, compact electrical switchboard, the massive switches of which suggested terrific voltages.

Other devices in the little space Allard did not recognize, excepting one, a portable photoelectric sound recording set which was undoubtedly wheeled about wherever needed to catch and record the dying, pain-racked gasps of the victims as they babbled forth their confessions.

Allard fought down his panic and horror, and set his teeth grimly to keep back the words that would buy his freedom, fleeting though it might be, from the agony that awaited him. There was a growing conviction within him that he was to be killed here after the Secret Council had tortured from him the information they sought.

The plan he had been rehearsing since his capture above the wilds of no-man's land now seemed a faint, desperate thing, a dying hope. Yet it must work—it had to! It would be his revenge for what they were about to do to him, his dying blow at the decaying Cities, sinking into brutality and barbarism. How he hated the people who accepted it all with such smug satisfaction!

He wanted to open his mouth and scream forth the words, yet he knew it would not do. His confession must be torn from him by torture, or the Secret Council would not believe. Yet he must not wait too long, for his weakened body was not yet recovered from the illness that had followed the crash of his avian. In delirium he might tell the truth. At just the right moment he must babble out his prepared confession, and hope for a quick, merciful death.

The ceiling lights flicked out, and other set like footlights round the edge of the inner space flashed on. Darkness veiled the members of the Secret Council.

Two huge men bared to the waist with hairy chests revealing immense strength entered the lighted space. Allard clenched his fists in anticipation, but the torturers halted, waiting. A deep, sonorous voice spoke out of the darkness.

"You, Harry Allard, will now tell us how to start the rain-making machinery, the secret of which we have not been able to discover."

Allard stood white and mute.

"You have heard," repeated the voice coldly. "No delay will be tolerated."

Still Allard forced back the words the horror of his coming doom sought to force from him.

The two torturers moved silently toward him. Suddenly Casillo spoke.

"Just a moment, your honors," he said, mopping his face nervously, for he entertained a vivid horror and personal fear of this room. "Harry Allard, who stands before you, was badly hurt in the crash of his avian three weeks ago. He has recovered, but is still weak."

A WILD hope leaped into Allard's mind, an overwhelming gratitude toward the small, dark man who was speaking in his behalf.

"The severer forms of torture will undoubtedly kill him—perhaps before we can get the information we seek," continued Casillo. "May I suggest that these two gentlemen start the proceedings with one of the milder forms —the strapado, for instance—so that he can still talk coherently when he gives the directions?"

Through the numb, sickening realization that Casillo was only suggesting more refined torture, Allard heard the voice give approval.

"Well suggested, Casillo. Let it be the strapado."

The torturers jerked Allard under the rope with its huge hook which they slipped under the cords of his bound wrists. The rope tightened, pulling his wrists up between his shoulder blades as his feet left the floor.

He cried out once at the sudden agony, then gritted his teeth and bore it in silence. Great globules of sweat broke out on his forehead and ran down his face off the end of his chin, and his breath came in whistling gasps. The rope gave a sudden jerk. He fainted.

When he came back to consciousness he was lying on the floor. Ice water was being poured over his face. Surprise that he had fainted so easily filled his mind; he had not realized how weak he was. His arms, still lashed behind his back, throbbed in agony. Casillo was leaning over him, his liquid black eyes bright and eager.

"Come, Allard, out with it! I have the sound recorder beside you—see? How do you start the vibrators and the Bunsetter machines? What are the dial readings?"

Allard opened his lips and closed them again fearfully. Not yet, not yet! Casillo sprang up wrathfully.

""Up with him!" he snarled. "We'll loosen that mouth!"

The torturers jerked him to his feet again. At the sight of the sinister rope with its pendant hook a great fear gripped Allard. Not fear of the agony that awaited him, but terror that he might become delirious and not be able to recite his prepared confession.

"I'll tell, I'll tell!' he screamed abruptly. 'Dial readings from top left to right are 37, 16 6XX, 9—"

"Here, here, just a minute!" broke in Cassillo excitedly, jerking the portable recording set into position in front of Allard. "There! Now go ahead!"

It was easy for Allard to simulate the extreme terror he more than half felt, and babble out his directions in feverish haste, those directions he had rehearsed over and over again on his flight to Louis City as a captive until he could not forget them.

Cassillo fairly wriggled with satisfaction when he had finished, and promptly switched in the speaking mechanism of the set which rattled off the directions in Allard's own voice. Allard dropped his chin to chest to hide his exultation. Now let the Secret Council do what it would —but only let death come quickly!

Cassillo addressed the invisible robed figures again.

"Your Honors have heard!" he announced triumphantly. "Now shall we not turn this traitor over to the torturers to receive his proper punishment for refusing to allow the Cities to reap first benefits from his rain-making machine?"

"Not yet," answered the sonorous voice. "Hold him until we learn if the directions he has given will set the apparatus to functioning."

"Very well then," replied Cassillo coolly. "Watch him, you two keepers, and see that he does not leave this room until I return."

He ripped open the sound recorder, seized the tiny roll of film and dashed out of the room for the nearest radio station to broadcast the directions to operators of rain-making apparatus throughout the country. The gunmen went along to protect the precious film. Inside, Allard laughed grimly.

One of the torturers snapped on a light switch, filling the entire room with light. Allard was startled. The robed and hooded figures had vanished. Even the chairs in which they had been seated were gone. Mechanical magic, doubtless.

Allard waited tensely. Not until the broadcast was finished and the directions to the operators carried out would his task be finished. Not until the last dial—ah, that was the joker, that last dial! For it would cause the controls to burn out under the terrific voltage.

HE moved his hands, and was surprised to discover that they moved so loosely in the bonds. Not surprising either. The bonds should be loose after supporting his body from the strapado. Surprising, rather, that the hands still obeyed his will. Still he could not free them. In normal health, perhaps, but not now.

Desperately he began to contrive plans to escape, but dismissed them one after another. He would first have to get his hands free—an impossibility, although he believed he could manage it if he could have a little time to saw the cord up and down against one of the rough iron legs of the brazier.

One of the torturers straightened up with a grunt.

"Must be going to rain," he grumbled. "My rheumatism is beginning to bother me."

"Seems close and hot in here," agreed the other, glancing up at the mouth of the air ventilator. "Change due, all right."

The first man walked leisurely over to an air pressure torture device to which was attached a small barometer. He glanced at it, then stared with growing amazement. Allard watched him, tense, breathless, wildly exultant.

"By the fates!" ejaculated the man. "Never in my life have I seen a barometer reading so low! Must be a terrific storm brewing! I'm going to look!"

He hurried round the end of the table to the wall and pulled aside a curtain, revealing a big window that looked out upon the river below.

The sky was oily black. Boiling clouds were piling up rapidly above the skyline of the lower city—were already passing overhead—tinged at their edges with lurid green light. Through the thick glass of the window sounded the shrill, ominous whine of the wind. Allard could scarcely contain himself at the sight. He knew, he was looking at the proof, that his directions to the vibrator operators had gone through intact, and the operators were now powerless to check the mighty storm gods that were stirring in their wrath.

"Lars, come up here!" shouted the keeper at the window to his companion. "What a storm it is!"

He slid back the catch of the heavy window to slide it up. Allard, watching him, threw himself flat on the floor. Next instant invisible fingers of air tore at him.

A hoarse, despairing cry burst from the keeper at the window as the outrushing air from the room hurled him out of the building to his death in the river a hundred feet below. Lars, the remaining keeper, saved himself by clutching the side of the window where he hung staring out in awe at the gathering atmospheric maelstrom. The long, sweeping tail of a newly-born tornado whipped and bounced along the river, tearing off portions of the lower city on the opposite bank and finally lifting a huge barge from the river high into the air where it broke in two.

Allard jerked at his bonds till they bit so deep into his flesh that they crimsoned with his blood. In vain!

Slowly Lars turned from the window and the darkening storm outside. His eyes glowed with murderous fury.

"You caused this!" he snarled, pointing at Allard. "You created this storm to kill us all. You tricked Cassillo and the Secret Council with your trumped-up directions for that infernal machine, but you have not tricked me. With these two hands I'm going to break your neck!"

He advanced slowly from the window hunched over like a huge ape with his powerful, stubby fingers hooked to rend and tear. Allard struggled to his feet. The brazier! Deliberately he backed into it and held himself relentlessly against its redhot side. An odor of scorched flesh and burning hemp. His hands burst free!

With a frantic dive Allard plunged behind the brazier. Too late the torturer saw the glowing charcoal and cherry-red irons tipping toward him! The cascade struck his naked flesh as the brazier fell on him.

An agonized scream filled the room above the roar of the storm. The torturer staggered back blindly, carromed off the stand of surgical instruments into the switchboard. A blue flash leaped from the short-circuited switches through his body, contorting it into a rigid corpse as the lights in the room flashed out.

An instant later Allard's feet were pounding up the clattering iron stairs out of the warehouse.

Escape! The imperative, driving need of it filled his

entire mind with a frantic urge. He must get out of the city! Yet none knew better than he how slender his chances were, for by this time the storm must be raging terrifically. It would continue to gather strength, would raze the countryside, in time might even smash and destroy this mighty metropolis of concrete and steel.

But it might not be too late to escape by air from the landing field on the roof if he hurried. An avian was out of the question. But a metal helicopter, or a sturdy battle plane ought to carry him up to the safety that should be found at 30,000 feet. And then to Cuba and the protection of Ebenezer Throstle and his private army!

CHAPTER IV

Saved by Water!

FRENZIED, panic-stricken people crowded and buffeted him aimlessly as he fought his way up from one street level to another. Safe though they still were in their massive ferro-concrete warren the storm outside was infecting them with nameless fear. Most people knew from the visi-screens that the climate and storms were about to be controlled by the Cities, and now wild rumors arose that the machinery had gotten out of control.

At last Allard found himself on the ramp leading up through the roof to the airport. He clung to the iron hand rail just inside the entrance, bracing himself against the gale of wind pouring up out of the city to join the hurricane outside while he peered in awe at the wreckage on the roof. More than half the trim little villas with their brilliant flower gardens had been swept away. Even as he stared another villa was caught by the whipping tail of a newly-hatched tornado and jerked from the roof to vanish in the murk.

The mighty diapason of the storm was crescendoing in power, filling his ears with the screaming howl of winds, the musketry of hail and rain, and the deep, ominous undertone of unleashed, savage tempest. Suddenly he glimpsed a dancing cluster of lights above the deserted wind-stricken airport. A sudden glare of lightning outlined a huge, misty transport liner from the eastern Cities battling for a landing.

Only an iron-nerved, surpassingly skillful pilot could handle a plane like that in such a maelstrom! By the fates, he would make it! No! Yes! He was settling now with blurred, speeding propellers holding the ship against the thrust of the hurricane. A wave of admiration surged through Allard. There, the wheels were touching—gone! The liner had dissolved in mid-air. A bit of the wing smashed the side of the entrance.

Allard turned back down the ramp dazed and incoherent from the tragedy, aware only that escape was irrevocably cut off.

"You—I'm talking to you, you sensational young scientist! Get those hands up!"

With a shock Allard stared at the men about him. Casillo and his gunmen! Like a dull-witted fool he had walked into their arms at the bottom of the ramp as they rounded a corner and started up to the airport.

"This is the greatest piece of luck I've had today!" exulted Casillo. "There will be no mistake about your death this time. But first I would have a little personal satisfaction . . . "

He ripped a smashing blow to Allard's face while three gunmen froze to Allard's arms and legs, holding him powerless to defend himself.

"You will put my life in danger with your lying directions, will you? And put the Secret Council on my trail! Take that, and that."

He beat Allard with childish, insane fury until he went limp in the hands of the gunmen.

"The first thing you will do is stop this storm!" snarled Casillo, as his victim struggled back to consciousness.

"I can't," mumbled Allard through cut, swollen lips.

Casillo grinned mercilessly and jammed his ray pistol against Allard's forearm.

"You will, or I'll burn you to death an inch at a time!"

"Burn and be damned," retorted Allard with growing strength. "The controls of all the vibrators and Bunsetter machines have been short-circuited and burned out. The only man who can stop the storm is Ebenezer Throstle, and he'll have to shut off the generators."

The pistol hovered over Allard's heart. But Casillo's agile, ferret brain was swiftly sorting over the possibilities of this new information. Suddenly he thrust the ray pistol back into its holder and dove into his pocket for his micro-radio set.

"Erlano, Erlano!" he called into the tiny mouthpiece. "I have succeeded in capturing this Harry Allard again, and have wrung the truth out of him that only Throstle can stop the storm. Shall I take the boys down to Cuba and seize control?"

To Cuba! Allard jerked up his head and stared. It was the very place he was trying to get to himself!

Casillo waited tensely for Erlano's reply. Strange! It was the first time he had ever called the head of the Secret Council in that fashion that he had failed to answer. With a frown he tried the secret wavelengths of the other members of the Council. No answer.

CASSILLO thoughtfully pocketed the micro-radio again. Undoubtedly the Secret Council was no more—its members must have been killed in their air yacht by the storm on their way to Nork City. The small dark man's eyes fired up with a strange light.

"Bring him along, boys; I'll have a need for him soon," he ordered tersely, indicating Allard. "We're going to Miami City on the Florida coast by mail tube. The storm there is much milder, so the visi-screens show. We'll grab off a plane and hop over to Cuba where we'll wipe out Throstle and his men and take possession of the convection generators. Then let the Cities, the Secret Council and all the rest come to me, Emanuel Casillo, and sue for peace!"

Mail tube! Safe underground travel at five hundred miles an hour beyond the reach of the storm.

The big concrete-tube room below the lowest street level was deserted save for an attendant, a middle-aged, terrified man, who guarded the airtight tube doors. A score or more of long steel mail torpedoes stood on the little tracks before them ready to be rolled into the tubes each with its emergency oxygen tank inside for human or animal occupants.

"Four of you get into the first torpedo," ordered Casillo. "The other two and myself with Allard here will follow in a second. Listen you," he flung at the staring attendant. "Shoot us into the Miami City tube."

The attendant shook his head violently.

"Too dangerous," he protested.

"We'll take the risk, you fool!" shouted Cassillo impatiently.

The attendant refused to budge.

"It is not safe. We have had word—"

With a snarling curse Cassillo rayed the man through the head, sprang over his fallen body and seized the big lever operating the doors. They burst open with a whistling scream of air. Then out of the tube spurted a huge column of muddy water, drenching all four men to the skin.

The gunmen tore their pistols from holsters and hurled them far across the room. Familiar as he was with the weapons, Allard knew that the soaking they had received made them extremely dangerous to the user.

Cassillo started frantically to release his other men from the closed torpedo, in which they had already locked themselves. Allard leaped on him like a wildcat. Gone was his weakness, and exhaustion of torture and beatings, swept away by a fierce elation.

Cassillo went down under Allard's smashing right, and vanished in the muddy water with a gurgle of terror. Allard had no chance to follow up. The two gunmen had closed in on him. With a grim, exultant laugh he met them. Picked for your small size and pistol speed, eh? Well, fight now with Nature's weapons! Sock! The leading gunman took Allard's fist fair on the chin, and fell with a dull splash in the rising flood.

The second man closed in a squeal like a cornered rat, trying to barge past for the door. His teeth sunk in Allard's wrist. With a savage grunt Allard loosed a terrific jolt that caught him behind the ear and dropped him.

Cassillo was rising to his feet, his dripping face contorted with insane fury, and his hand clutching his ray pistol. Allard ducked instinctively as the weapon levelled at him.

No ray stabbed at him. Instead the terrific force locked in the little weapon, short-circuited by the water, fused the inner workings of the pistol. The ray flashed up Cassillo's arm, striking the base of the brain. He fell lifeless.

Allard caught the body, drew from the pocket the micro-radio and fled.

Four days later Jukes and a troop of soldiers from the Workers' Army entered a tiny mono-car garage behind the Science National Bank in Louis City. Allard, who was seated in the corner, devouring a sack of bananas he had found in a deserted peddler's cart outside, stared at them unbelievingly.

"What are you doing here, Jukes?" he asked.

"Rescuing you for one thing, Allard. After you dried out that micro-radio set and got into communication with Ebenezer Throstle and told him to shut off the current, he got in touch with me and told me where you were. So we came here first."

"But the soldiers!" exclaimed Allard in bewilderment.

"Advance guard of the Workers' Army which is moving in to take possession of the country."

"But I don't understand! Have you made up with Holan?"

"Hardly that," grinned Jukes. "Instead, we launched a revolution among the Workers and overthrew Holan and his Assembly the day you were captured. Holan fled the country, but we have announced his pardon if he wishes to return peaceably and accept the new order. This isn't the old Workers' Territory, and the League of American Cities that you knew; it will be a new united nation. We are holding an election the day after tomorrow. Ebenezer Throstle is our unopposed candidate for President, and he has already named you for the position of Secretary of Science in his cabinet.

"We are taking over the entire country, thanks to your double-edge invention which helped us and fought the Cities. America has been stricken by the biggest storm ever known. Millions of lives have been lost. Some of the smaller cities have been razed, and the League has fallen. But out of this disaster will rise a republic, the New United States of America, on the sites of the ancient, original United States, with freedom for all, and a government for and by all the people—of the people. How in thunder does that old document read, anyway?

"That's one reason I'm in such a hurry to get on east to Wash City—blast those names anyway! We're going back to the originals, and instead of Wash City it will be Washington. I want to go to the historical museum and examine that old constitution of the original United States and that other ancient document, the Declaration of Independence, so that our first Congress can found the New United States upon the same principles that will guarantee the individual the same freedom and protection he enjoyed in the old United States back there during the twentieth century and earlier."

THE END.

OUR SUN -- AS OTHERS SEE IT

Our own favorite star is so bright that it is almost impossible for us to imagine a universe where it is not the dominant luminary.

Yet, travel a few light-years away and our Sun becomes invisible to the eye while other stars of apparently feeble light are shining with apparently undiminished lustre.

If the majority of the stars we see on a clear night are circled by inhabited worlds (which astronomers now doubt) there are very few of these from which our sun is a conspicuous object; and none from which even our largest planet, Jupiter, could be detected.

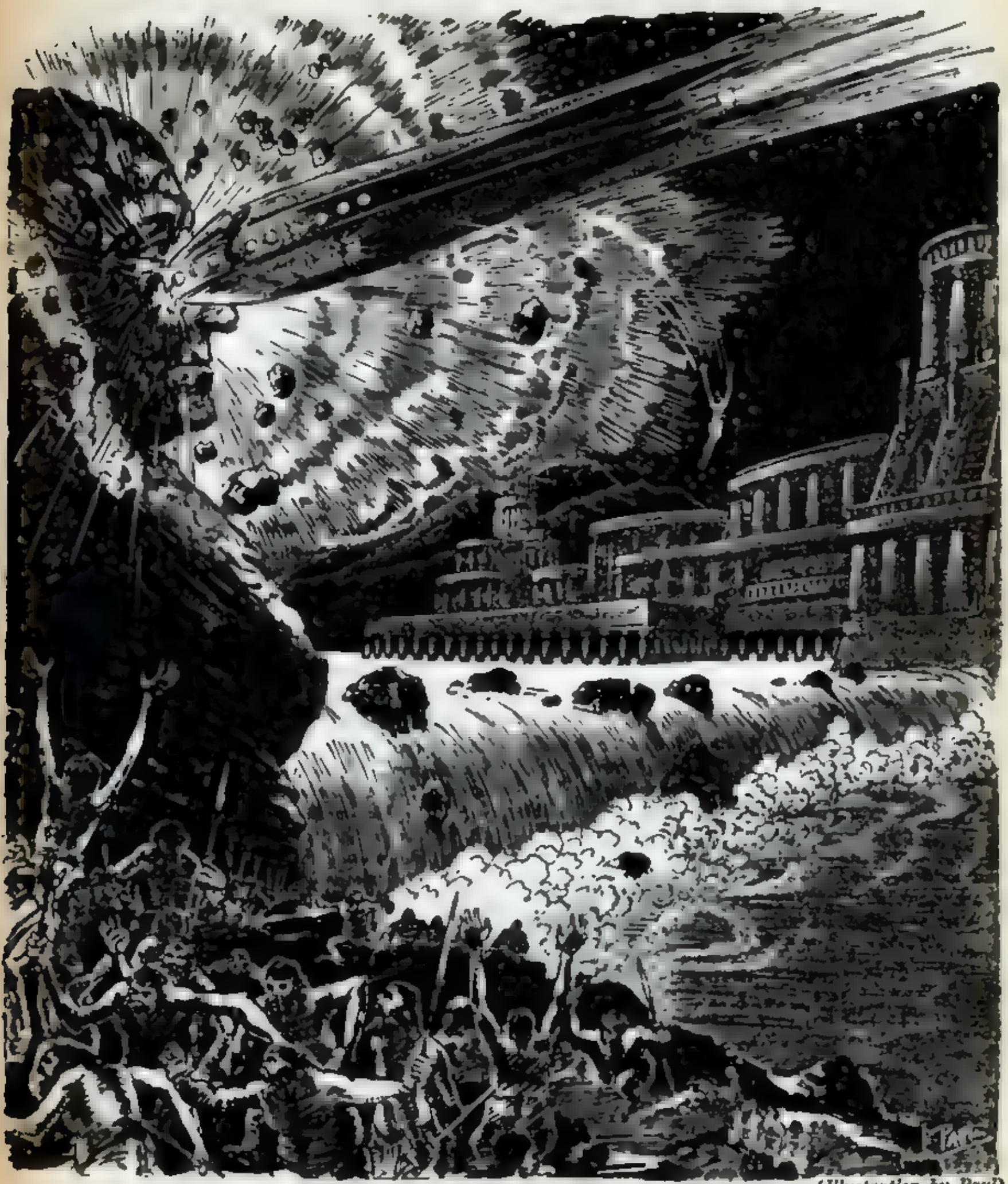
From outside the galaxy our sun would be invisible, even with telescopic aid, and all of its bright neighbors except one—the name of which is perhaps familiar to readers of Wonder Stories.

Read this interesting article in the JULY ISSUE OF

EVERYDAY SCIENCE AND MECHANICS

BROOD OF HELIOS

By **John Bertin**



(Illustration by Paul)

He heard dimly a crash—the crash of a rocket ship driving into the great stone face. Then he struck water like a plummet.

BROOD OF HELIOS

What Has Gone Before

PROFESSOR GEORGE MEREDITH, eminent scientist, his niece Ruth Meredith, her friends, James Gregory and Alan Deneen, former football star, awaken from a trance in Meredith's laboratory in a skyscraper in the heart of New York to find themselves in another part of the universe. Meredith had been experimenting with electronic barriers.

They find themselves on the side of a hill in a wild desolate country, filled with a strange rubbery vegetation and populated by strange animals. Above them are two suns, a red and a blue sun, and at night a strange moon shines out. The first night in the wilderness they see a great rocket ship shriek across the sky. They realize now there must be sentient creatures on this world. One ship falls near their hiding place and they rush to meet it. They are attacked by a group of kangaroo-like creatures. While Gregory and Meredith rush to the ship, Deneen fights off the creatures with Ruth at his side.

The two men are apparently captured by the creatures from the ship, which rises into the air again and disappears to the north.

Deneen recovers and with Ruth they fight for months against nature for survival. They find that this world has two types of vegetation and life—one of the non-protoplasmic rubbery variety, and the other the kind of life they had seen on earth.

Deneen and Ruth after seeing rocket ships eternally shooting toward the north determine to go north themselves and try to find the civilization that must exist, rather than fight brute nature for the rest of their lives.

One day they see a rocket ship settle down on the ocean shore near them. They find it on the beach the next day with some bald, toothless creatures dead around it. Deneen and Ruth are attacked by some feroc, savage, half-naked men, and escape in the ship, whose control Deneen learns. As they are flying over the ocean in it, men from another rocket ship signal them to follow. They reach land and find themselves over a great city in the inland. Here the rocket ship crashes and Deneen and Ruth fight their way through the hordes of savage men that surrounded the city. They are welcomed to the city by Gregory who has been here with Meredith since their disappearance.

Gr[illegible] points out to them a great face of W[illegible] carved [illegible] the rocks, that is an image of god to these savage men. The savages are bent on the extermination of this great city, which is filled by the bald, toothless creatures. Deneen learns that they are [illegible] on earth, but that they are 4,000,000 years in the future. Gregory [illegible] that these toothless creatures, who seem to have no spoken language but communicate by telepathy, have come from the moon. They have lost all power of fighting and are therefore at the mercy of the hordes of the spearmen attacking their city. They look upon Deneen as a "water" or war lord.

Now Go On With the Story

THE wide front street was as bright as day. Below it flowed the river, twisting at the avalanche mound, rushing on at a faster pace. Another group of the ape-like men came over the road edge. Deneen slowed. He paused behind a fluted column, noticing several of the moon people running awkwardly away from the place they should have defended. But a rallying yell died on his lips.

It was already too late. Across the narrowed river the enemy began to pour, a living wave, part of a vast torrent beyond. The gorge was full of a loud, sustained crying that had displaced the marching chant, a yell of lust and power.

Deneen picked arrows from his quiver. A thousand unasked questions would die with Meredith and Gregory. They could never escape, perhaps he could not escape himself with Ruth, upriver. The front of the living wave, of dirty-brown men, club-armed and bestial, lapped over the street edge, and began to move beneath the fluted columns, slowing as if in awe of the great structures. Then they glimpsed Deneen—the scattered group of undecided moon people behind him.

THE final installment of this masterpiece reveals completely the nature of the mystery that has baffled our adventurers . . . and our readers. The history of the silent, toothless moon men, and of the fierce fearless spearmen is almost unbelievable, yet it is convincingly portrayed. We see the rise of one race to a mental power unsurpassed, yet they are unable to fight the battle for existence . . . they have forgotten how to fight. We see the other part of our race sunk in savagery. Between them the grim struggle for survival and the destiny of the race will be fought, and go on to its merciless conclusion . . .

A stone-tipped spear rang against the pillar by Deneen's face. Rocks, hurled clubs, made a cloud of missiles that rebounded off the smooth paving. After them came the squat horde, yelling its blood call. Regrets died in Deneen. He stepped out and pulled the heavy bow across three feet of arrow shaft.

The long feathered missiles, driven with terrific force, created an eddy of confusion. The front line of the horde curled back on the thrust behind them, fighting to get away from the winged death. But the pressure behind was overwhelming. With scarcely a pause the torrent came on. It flowed up the street, and the right edge of it spread beneath the columns.

A thrown club staggered Deneen. The whole scene became a nightmare, a fantastic inferno wherein his task was to stop legions of howling devils. Another club struck his shoulder, numbing it, twisting the flight of the arrow he was discharging. Gregory's words rang dully in his ears. They were finished. He thought of Ruth, and turned.

Then the lights went out, winked into a phantasmagoria of moving torches, shadows that wavered and flickered and retreated, and long, fading ropes of glowing red hung from the street posts and around the pillars. The lance of the searchlight played over the advancing horde on the front street.

Deneen swung his bow over his shoulder, and ran into the half gloom beneath the pillars. To his right torches flared showing grim scenes—scurrying, ape-like men spearing soft-eyed fugitives to death. The horde was spreading through the city. Deneen felt a cold dread rush over him. Perhaps he could not find Ruth, and get her away upgorge, in the darkness, the friendly darkness of the wilderness they knew. Time was short. The city of the rocket people was doomed.

"Gregory!" he yelled. "Ruth!"

Then he heard a change in the shouting behind him. From lust to terror the cries changed, and Deneen, turning, saw that the front street had become a shambles. In rigid astonishment the man stopped, and watched.

Some invisible power was withering the close-packed ranks of savage men. They fell in writhing groups, fell in long lines, lines that crumbled instantaneously along their length. The whole mass of them was prey to some terrible decimation. Torches and bodies fell in indescribable confusion, and to Deneen's blank amazement, the surface of the street showed long scars, rapidly growing, a crisscrossing of lines around which the material of the roadway slowly tumbled till the whole level of the section was well below the flooring under the columns. The din

was indescribable. Near the street edge one of the pillars buckled and crashed down upon the mass of bodies and the shattered concrete. Back at the city's extremity, where the horde came up from the river, was a wild confusion of fleeing men meeting the main army from the valley.

And now Deneen saw the withering death strike home in the packed mass below the roadway. The avalanche mound that furnished partial approach from across the river began to shift and lower as deep crevices appeared in it. Bodies and dirt and stone—Deneen saw with something like horror that where the darting lines passed, bodies and dirt and stone disappeared entirely. Through the white glare of the searchlight glinted greenish stabs, evanescent, somehow connected with the annihilation of substance going on in the river bed. A spray of the greenish tinge touched the opposite gorge wall, and Deneen saw the shadowy mass begin to move. A rumbling roar dwarfed the sounds of human terror and pain. Countless tons of rock and earth smashed down into the gorge, blocking the river's course entirely.

A cry roused Deneen. Echoes of the second avalanche were rolling, dying in the air. Beneath the columns of the city, beast like men, no longer pursuing the rocket people, crouched like cornered rats, gazing at the terrible scene beyond, torches flickering in their hands, and glinting in reflection from obsidian-tipped spears. The yell which had roused Deneen was repeated.

JOHN BERTIN

SUDDENLY the full glare of white light bathed the plazas again, revealing the scattered mass of the horde people. Far in, at foot of a wide stairway, Deneen saw a man, wildly beckoning—Gregory. He ran forward, and as he moved, the skin-clad mass to right of him shifted away, edging back toward the crumbled street. They were caught in a city of magic, and all the ferocity of moments before had vanished. Sprawled bodies, clad in grey cloth, lay under the columns, and to the primitive minds of the retreating vandals, those bodies called for vengeance. Deneen did not swerve. He ran straight for Gregory. "What's up?" he cried, reaching the broad stairs. "Is Ruth all right?"

"The death ray! Meredith's got it working! Ruth's up with him. We're saved, Deneen—saved!"

Deneen looked around. "We'll have to get that invention down here. If those fellows had their nerve left, they could scatter around the plazas, get up these stairs, and wipe us out. My arrows won't last long. This—death ray?" he asked sharply—"can it be moved? What is it?"

"I don't know!" muttered Gregory, watching the torchmen beyond. "Better come up and see yourself. There's nothing I understand around here." He suddenly stared. "Look! What's that?"

Deneen turned. "Water!" he said slowly. "The river. It's blocked down below, and rising. These courts will be flooded in ten minutes. And those spearing fellows might try the stairs. Let's go!"

The upper portions of the moon people's city was a fairyland of majesty and decoration. Wide, winding stairs debouched to great halls. Deneen saw archways, rooms, corridors, everywhere. But the need for action was too pressing for any but momentary observation. Through the corridors, on the stairs, waiting dumbly in the halls, were people—sad, soft-eyed people who cried to Deneen without audible speech—people that followed him and Gregory. "Look!" muttered Gregory as they passed a wide doorway in the side of a corridor. "Power house. Laboratory behind it. These people know things you'd never dream of, Deneen."

The open doorway showed a vast room, packed with mushroom-like rows of machinery—lit by greenish, mellow light. A low hum of revolving wheels came to Deneen. "These cables," said Gregory, kicking two round objects that wound along the corridor—"are connected to that ray. It's just a makeshift. There's Meredith now."

Deneen strode forward. In another doorway, some fifty feet ahead, at the end of the corridor they were in, stood Dr. George R. Meredith, clad in the greyish, metallic suiting of the rocket people. Back of him was Ruth. The room behind was filled with the soft-eyed moon men.

"Deneen! Alan Deneen!" Meredith's greeting was almost reverential. Like Gregory he looked tired, starved. But in his squinting eyes, behind large glasses, Deneen saw a glow, a light of excited zeal. "Come in, Deneen. These people are waiting for you—they know you. Come in. We'll go over to that breach I made in the wall, so I could play that ray of mine over the riverbed and the front street. Come in."

Deneen slowly complied. He wondered if Meredith, like Gregory, was going mad. It was queer talk, about his being known to the bald folk.

Ruth came to him, and the feel of her supple body in the circle of his arm, brought a contrast sharply home to the man. The wilderness they had known, they had come to know, but that great room and its people . . . he noticed a wonder in Ruth's eyes—a veiled fear. They threaded a way through the assembly. Deneen felt no enmity, no strangeness in the people themselves. They were kindly, bewildered folk, wistful and helpless. But now a vague sense of the complexity of the riddle these things presented came over him. Meredith stopped by an oblong, box-like arrangement on metal legs, connected by smaller cables to the two main strands on the floor. The front of the box narrowed, projected into a ragged hole in the wall. Deneen went closer and saw the river water, lapping over the street edge below, saw a barrier of earth and stone further down, and beyond a turmoil of ruddy lights over fleeing, moiling masses of men. Across the gorge, high up on the wall, were the protuberances of

stone and soil, which held, aloft, the overhanging face of George Washington.

"Meredith," said Deneen sharply. "Tell me one thing. Who carved that face up there? These people? How in the name of sanity did they reproduce Washington's features like that?"

Meredith turned from the oblong contrivance by the wall. He gripped Deneen's arms. "I thought you were going to ask about this ray. Ask about the power-room you passed. Because in that room, in the laboratory behind it, and assembled into this box, are secrets of nature, and the control of nature that makes of these people more gods than men. The powers of the universe, Deneen! In our hands!" His voice rang. The people around looked on with their great soft eyes. "That face," continued Meredith in calmer tone, "was chiseled out of granite by your countrymen and mine. About four million years ago."

"Alan—uncle was telling me that face is part of the Rushmore memorial, from the Black Hills of our South Dakota," said Ruth. "I can't understand."

"The truth," said Meredith loudly. "God's truth, Deneen. That face is Washington's, chiseled in granite when the United States of America was upon the earth, and the earth revolved around the sun we knew, countless years ago."

"Meredith—we've never left the earth? But how—"

"My boy—" Meredith's head shook. "After I tell you, you will not grasp it; not for days and weeks. It is stupendous, cosmic, terrible, the story of these people. The tale of the ages, Deneen! An epic that makes of Homer a babbling child! Back in what I call the library, among thought transmitters and intangible voices from the past, are steel-leaved and bound books, incredibly ancient, written in English. The story in those volumes, Deneen, is beyond my powers to convey. It is the tale of a cataclysm that will leave you breathless, staring back into the chasm of the past to the years and centuries in which the fate of humanity hung in the balance. After these writings there is no other trace of our language, Alan. Language is unknown to these people who are at one and the same time our contemporaries and the incredibly remote descendants of our fathers!"

CHAPTER XIV

The Silent Race

DENEEN grew rigid. The sense of the menace below them ebbed down in his mind. "You mean these people are *our* kind—our blood? Gregory said they came from the moon!" Thoughts crowded upon him. "And that moon—where did we get it?"

Meredith smiled. "We never lost it, Alan. That great globe is Diana herself—our old satellite, much nearer, twisted out of tidal balance, revolving no longer in conjunction with its monthly circuit of the earth, but showing us all its sides and waxing and waning its crescent phases due to two suns. But it is the same moon, Deneen: The refuge and the home of the human race for four million years!"

Deneen looked at Ruth. Her eyes were round, bright. "Uncle," she said slowly, "you mean we stayed in the Worth laboratory—"

A sudden jar halted her words. The floor quivered beneath their feet. A low, rumbling crash of falling walls sounded from beyond the doorway. Deneen thought of the torch fires on the rim of the gorge, over the city.

"This death ray," he demanded. "Can you move it? The story must wait, Meredith. Or mighty soon there'll be no story to tell."

Meredith sobered. "I can't move this, Deneen. It's just a makeshift—an appliance of a laboratory force these people have long been familiar with. Can't explain now," he added hurriedly. "I forget those devils out there. Listen!"

From the wider valley came a reverberating chant. Wavering, dying, it was taken up again—savage, weird! "*Ai* Aye!—*Ai* Aye!" A song of stubborn hate that swelled and grew and filled the night. Meredith's wan face showed conflicting emotions.

"Devils, Deneen. For scores of thousands of years they have sung that chant in these hills, under the great stone face that to them is God. For long ages a tradition has persisted among them that the moon people would come down, and rob them of their lands. They know no fear, those torch-waving demons, Deneen—they have no instinct of fear. That is why even the death-ray, a weapon the like of which no human has ever seen, does not drive them completely away. They'll dance and chant, and work up a blood lust, and come again."

Deneen held Ruth closer. Meredith, like Gregory was on the verge of madness. Something had slipped in the professor's mind, letting his imagination run riot. He was speaking confidently of the traditions and ways of the horde outside.

"No instinct of fear, eh?" Deneen asked quietly. "And these people have no instinct to fight. Quite a combination."

"Quite," said Meredith, going to the oblong mechanism by the breach. "But this ray will save us, Deneen—save the stupendous body of knowledge that is now ours, give us mastery over the planet." He turned to them, the odd light in his eyes heightened. "It just couldn't be, Deneen. The Power that brought you here, that worked with King Zorr and through him, that kept our kind alive through the aeons, would never ordain that all our knowledge, all the things of the spirit and mind which these people have achieved, should be destroyed by beasts like that. I am but the instrument of God, Alan."

Deneen stood very still. Ruth gazed at her uncle with wide, questioning eyes. Back of the big room sounded another rumble, a smash and jar that quivered the solid flooring beneath their feet. Deneen felt surges of alarm in his mind, as if the emotions of the people about him were being transmitted to him.

"We'd better make a couple more of these rays, and point 'em at those fellows, on the gorge rim. Suppose they drop a stone over *this* roof? And how about that river? How high will it rise?"

Meredith, just stooping to touch the knoblike protruberances on the death ray casing, suddenly stiffened. In an instant a swift change transformed him, dimmed the glow in his eyes, made of him a little, grey-faced man.

"The river won't rise very high," he said slowly, turning his head toward the door. "It'll spill over that barrier before reaching this room. And this roof is conical. No stone can break through." He was muttering, as if another thought obsessed him.

A series of light jars, mingled with smashes of glass, came to the packed audience about the death-ray pro-

jector. Deneen saw horror in Meredith's eyes. He was trying to speak. Then a heavier crash, a long rolling of thunder, jarred through the room. The lights puffed out. They glowed again, then died slowly. The bald people crowded together like frightened sheep. Deneen felt a great pity. He could hear Meredith crying, like a man gone mad.

"The laboratory—the power room! Deneen! We're done for! The end! The end of the human urge for power!"

He was groping toward Deneen and the frightened woman. "To end like this! A prey to beast men, who can never know—who will destroy everything, leave no trace. Deneen—God Himself has forsaken us! Zorr was wrong! Wrong!"

Deneen held the woman close. In the gloom he seemed to see the great, soft eyes of the rocket people, hear their voiceless cries. Gregory babbled behind them. Meredith reached them, shook them, voicing his queer lament. Meredith was talking like a madman. And outside, rising, swelling, the chant of the skin-clad beast men filled the night.

DENEEN'S voice rang with a note of mastery.

"Take it easy. Why can't we get out of this, Dr. Meredith? Instincts of fear or not, this rig of yours made a terrible mess out there, and those fellows won't come across the river for some time. Let's get some organization into the city. Can you talk to these people?"

"Sometimes," replied Meredith calming. "I get the sense of what I mean over to them. Not so much in words, as by thought transference. But there's a great gap, Deneen—a gap that stops all communication in detail. Their minds work differently. Only King Zorr crossed the gulf to me, and to you, in a supreme effort to save his people."

Deneen reassured Ruth. The woman was anxious about her uncle's strange speech. "We'll talk about King Zorr later," he told Meredith. "Just now, we've got to see how much damage has been done to the power here. If it's gone entirely, we've got to run for it. Upgorge."

Meredith waved his hands. He moved out past Deneen, and waved his hands again. A movement stirred in the packed room. "Let's go, Gregory," said Deneen simply. "Get hold of a club or something. There are about a hundred of those squat boys downstairs, and they'll come up as the water rises. Ruth, stay close to us."

Meredith went back to the ray mechanism, which looked like a huge beetle in the gloom. He returned. "Absolutely dead," he said.

The moon people were filing out of the doorway. Some faint tracery of light still showed in the rope devices strung around the walls, and in the very dim illumination the scene was weird. There was no tangible evidence of panic—no rush, no cries of alarm. But in Deneen's mind rang a piteous calling, insistent, bewildered. He felt again a great pity. There was something about the soft-eyed people that was warm and human and likeable—an intangible aura in the air, permeating their surroundings. And all the soul of them, the hidden forces that cried dimly across the gulf to his mind, were expectant of something, something that he, Deneen, could do.

Meredith said: "We had a line of emergency batteries connected in parallel to every separate lighting circuit." He spoke now with a manner of a man in full possession of his faculties. "The smash must have thrown the switch in, but broken the battery cells up. There's just a trace of voltage in those light ropes."

"That's something," said Deneen. "Our chances are right there in that powerhouse. Get lights over this place first. Those fellows downstairs can do good work in the dark, on these slow-moving, soft people."

"Deneen." Meredith's voice was still calm. They were passing out of the big room into the corridor, pushing through the slow moving, moon folk. "We've got Ruth here, and I shouldn't discourage her. But the fate in store for us will not wait because we quibble. This girl has come through a terrible adventure with you, Alan. I believe she can face death."

"Yes, uncle," the woman said. "I can. What is it?"

"We can't get away upgorge. The beast men have come down the walls. We saw them this morning, inching down. They're waiting in that narrowed defile. In any case, the dammed up river, washing up to sheer rocks, makes flight that way impossible. Our only hope is the laboratory—the power-room in front of it."

"The power-room, then," said Deneen tersely. "Push through, Gregory!"

But the power room was a smashed mess. The whole roofing of the corridor had caved in by the door Deneen had passed not a half hour before. Faint hissings came to them as they began moving around the edge of the debris. Glows of varicolored light showed a confused mass of wreckage, of tangled wire laceries hung with blocks of the concrete roofing. A dark, jagged hole marked the path of a great chunk that had crashed down from the gorge rim.

"Follow me," said Meredith, and began to clamber over the debris. Gregory hung back, his gaze on the torn ceiling. But the pale faces of the company about him, the pleading eyes, were too much for his nerves. He scrambled after his three companions. To Gregory the soft-eyed people represented madness. Their crying in his brain was a ghost chorus which for months had haunted him, had broken his spirit. He caught up with Ruth and Deneen, and with them followed Meredith in poking around the ruined power-room.

Deneen kept one arm around Ruth. His mind held Meredith's resigned words. Slowly he shuffled the pictures of their position across his thoughts. The lower valley, from which came the faint chanting of the horde, and the gorge across from the city, beneath the great stone face of a vanished memorial. Here the rising river waters were spilling themselves over the columned plazas, and driving squat men up the stairs to the upper halls. Above them was the narrowed defile, blocked by the flood, guarded by waiting spears and clubs. Yet there had to be some way out—some way out for him and Ruth.

He began to force out of his consciousness the calls for help, the feeling of responsibility which weighed upon him, which had dulled his faculties since entering the city of the moon men. The first law of nature spoke insistently in the man who had been Alan Deneen. For months he had fought, with the woman at his side, the elemental forces of an unpeopled world, bridging the ages back to the time when man lived by his unaided brain and hands. Naked nature cried in him now. And thought of Ruth, clubbed and mangled, revolted him, sent the blood pounding through his splendid body.

He could get away upgorge with her, water or no water.

He had arrows left—the swift, winged death that could clear his way. He knew the darkness, the bare breasts of earth. He could get away upgorge with the woman.

MEREDITH was saying slowly. "Just one corner, over there—" pointing—"free from the effects of the fall. Want to risk it? Or shall we get out of here? They may drop another mass at any moment."

Meredith spoke sanely now. And it came to Deneen that the little scientist would die with the soft-eyed moon-folk, speared and clubbed in the short fight which would ensue when the horde entered the city. And Jim Gregory, the tall young man behind them, with the horror etched into his face.

"What's over in that corner?" asked Deneen, his voice a bit hoarse. He could see better now, see the mass of moon people in the broken corridor behind them, see their dim moving shapes in the branch halls and passageways which honeycombed the structure they had made.

"Searchlights," Meredith was saying. "There's a row of little ones below the desk. The only part of this giant plant I knew, Deneen, was that corner. We're just children when it comes to technical knowledge—groping barbarians. These people had things here—" he broke off, as if explanations were futile. They moved among the earth masses. Meredith tapped a protruding bulk with his hands. "One end of a generator set. They start electric currents, not by induction, but by direct breakup of the atomic systems. My method, that froze and held us in suspended animation so that we have lived to know of these wonders) is elementary, practical physics to these people; or so I infer. Most of what I know are inferences, Deneen."

He had reached the corner of the wrecked room, and was fumbling along the wall. Turning, he levelled something in his hand, and shot a bright lance of light over the tumbled wreckage, up to the ragged hole in the ceiling, back across the faces of his three companions. "Many of our simple things are still in use, due to the very similar human needs of these people and ourselves. I had intended fixing the death ray into little hand rigs like this, and to gradually teach the men how to use them. We had a war on our hands, a struggle to gain possession of a planet. Once the crisis was past, victory, with the powers possessed by these people, the Zorrians I call them, would have been a matter-of-fact procedure. But we did not pass the crisis. We failed Deneen. Zorr's message to me was wrong. The only thing left to us is to die like, well, like good Americans. Follow me, into the laboratory. It's back there."

Deneen said nothing whatever as they moved among the wreckage of an amazing interior. Big glass tubings, inverted, bulb-topped, faintly glowing, showed up along the walls. At one place Meredith stopped them, to look into a sort of pit in the floor. A blue, quivering flame pulsed and eddied, faded and glowed, within a crystal cylinder. Steps led down to it.

"That," said Meredith, playing his searchlight over the surroundings to allow his companions to approach nearer—"that," he repeated in his strangely calm tones, "was the first piece of apparatus the Zorrians installed. The pioneers who found this gorge used emergency batteries of the same type as those within the rocket ship walls, to supply power for that transmitter. It was to be connected with the main generators as soon as the technicians could find time."

"Transmitter?" asked Deneen, looking at the pulsing blue flame.

"Yes. The moment that flame came into being, the gorge was located to the Zorrian pilots. Every rocket ship compass within a radius of millions of miles is oriented to this blue flame."

He paused. Silence was over the wrecked rooms, a silence ruffled by the chanting of the horde outside the city, and the little half heard splashings of water below them. "Just another thing to be smashed by senseless brutes," Meredith chimed in. "Or else they will squat by it, and wonder dimly, or worship. And after the flame dies, for centuries they and their descendants will come to visit the ruins of these walls and hold their orgies in the hall of Zorr."

A silent battle fought itself out in Deneen's mind. They moved along, amid broken machinery and long table rows covered with glass tubing. A row of benches, half hidden by a section of fallen wall caused them loss of time as they moved back to the main corridor. "Over there," said Meredith calmly, "were technical books. Or so I infer. Like headphones. They would strap them on, the workers here, and sit for a while, relaxed. What came to them through those bands is beyond me. They produced in my mind only a far whispering, like the sound of a great sea, too distant for clearness. Only Zorr, without external aid, conveyed things to me."

CHAPTER XV

The War Lord

DENEEN'S bearded face was set to a struggle of impulses.

"Something is wrong!" exclaimed Meredith suddenly, as they began moving through the power-room, toward the mass of moon folk in the corridors beyond. "I feel it. I feel the sense of fear. Don't you hear them calling for help?"

Deneen's breath blew forcibly through his nostrils. "Yes," he said. "I've got an idea what's wrong. There's quite a bunch of those torch fellows, caught in the plazas, down below. They saw that ray cut up the street and mountainside, and they won't go back. The water is driving them up the stairs." He almost growled the thought in his mind. "They'll slaughter these soft-eyed people as tigers would a bunch of sheep." Across Deneen's back was the longbow, and the arrow quiver. The arrows he was going to save for the flight upgorge, the break for freedom with the woman whose supple waist was in the curve of his arm. His woman. His life and hers. There was no shadow of chance of saving anyone else. Sacrifice would be useless.

"Well?" asked Meredith as they began moving among the voiceless, large-eyed people. "What are we to do? We've decided to die like good American. Yet—how should good Americans die? Discussing these wonders?"

They paused in an intersection of passageways. Meredith's slim frame seemed animated by some strange energy. "Shall we wait while I tell you about King Zorr and a little of the story that will die with us?" he continued calmly, "like philosophers, while those beast men steal

upstairs, from one hall to another, spearing, clubbing, these kindly people?" His voice rose, lost its even calmness. Meredith, the scientist, was submerging in another personality.

"That's what they are, Alan—kindly," he went on. "That is their main attribute—in that direction they have made the greatest strides. Physically they are not what we are, a man like you could live through things at once fatal to them. They lack some virtues it is in our very blood to admire, and because they lack them they are helpless now. They can't talk, Deneen!"

Meredith seemed to be pleading a case. "They seem strange. Gregory cannot bear them around him. But I—from the very start, Deneen, these people have grown dear to me. Can't you see? They are ourselves, lacking many things, gone to another plane of existence, the mental. But in going they have grown kindly, Alan. That is their great achievement—their relations to one another. I do not know their life. I cannot reach through to the soul of them. But I feel it. Zorr made me feel it. Technically they have made tremendous strides—the powers of the Universe were theirs to use if they had been given time to expand in their new home. But they used these powers to further life.

"It was a wonderful sight to see them, in gatherings, when danger was not threatening. They loved one another, these people, Alan, like, children of Christ, applying his message. They can communicate throughout this vast city, without moving. And now all this kindness is helplessness." He paused again, staring over the heads of the massed folk. "Listen! From corridors far down the gorge we hear cries of fear, of pain, of wonder. They do not understand, these people, Deneen, what is going on. We have the instincts in our blood, to fight, and forget the threat of death as we fight. But not these. To them it must be a monstrous thing that men should kill one another."

"Well?" asked Deneen gruffly. Meredith seemed to be addressing him indirectly.

"Four million years ago there was a race that already frowned upon needless bloodshed, but still had the stomach for it, because they were of that time, children of another sun." Meredith's voice began to ring. "All kinds die according to their kind. These people will wait for death. It is natural. It is right. We cannot. We commit no sin by fighting. Whoever passes judgment over all races and all kinds will pass judgment according to kind! Zorr sent me this message, Deneen—Zorr whose mind had pierced the secrets of the Universe. He sent me the message, telling me of you, fighting, traveling with your mate through the wilderness, the war lord that was to come and have his people. Zorr said that it was the will of the Ruler of all times and all places that this should be so!"

"War Lord?" muttered Deneen. "Valor!" He had been looking closely through the semi-gloom at the high-strung scientist.

Meredith had changed. His manner was rhetorical, wild. But constant repetition, like water dropping on a stone, were beginning to fret Deneen's hard practicality. "War Lord!" he muttered again. "You knew I was coming. Who was this King Zorr? Did he have great, sad eyes?"

"Dark eyes, Deneen—set in a misty face. A face that shifted, appeared and vanished, back in our minds. Zorr! That is the name I give to the voice and face that I saw and heard, day and night. He kept me sane, and gave me visions I never knew on earth—visions that are both science and beyond science. He ruled the Zorrian race on the moon, in a great, white city, and watched over these settlers, advising them, telling them that the future of all spiritual things, of all human powers, lay with them. Then the catastrophe happened. Zorr died. His people cannot talk to me as he did. No more messages came from the moon, save flashes in the light system in the Great Valley, to tell us that Zorr was dead. Leaderless, lost, they are here, Deneen, about to be cut to pieces."

Deneen looked through the dark lanes of many passages, upon a silent, bald folk. They seemed to be calling to him.

"War lord!" he half growled. It was impossible. "Why do you speak in that tone, Meredith?" he asked directly. "It seems you are accusing me of something. Didn't you say yourself we have no chance? How can I, or anyone else, save these people?"

Meredith gripped his arm.

"I don't know, Alan," he said with another surprising change from fervor to calmness. "It was Dr. Meredith, American and scientist, who said we had no chance. The circumstances doom us. There is no way out. But there are some things in the cosmos, Deneen, beyond our feeble comprehensions. After what has already happened, I admit no impossibility. Zorr told me, to the very end, that his people would not die, that you would deliver them from this danger. And perhaps, communing with him through all these weeks, I have come to some power of reading thoughts myself. It seemed—" he broke off. "Deneen—I love Ruth. But you can't do it. You can't do it!"

"Look!" cried Gregory. "Down there! The beast men!"

FAR along the main corridor the moon folk began to move, to eddy. Yells from alien throats came to their ears—and a silent crying, anguished, helplessness, that caused Deneen's nerves to crawl. He began to advance, slowly at first, like the decision forming in his mind. Then the struggle within him died.

"Meredith," he said decisively. "Half of your talk is a riddle. But it fits in with some mighty queer things I've seen and heard. And Zorr or no Zorr, I can't get out and let these killers butcher you and Gregory and these—" he paused for lack of words. Then, turning—"Ruth! I can't! Can't break for it!" He embraced her. "Little woman, we got into this mess, when we left that raft on the river bank."

"They're coming this way!" cried Gregory. "Look!"

Deneen released Ruth. She sensed the meaning of the passages between her uncle and mate now, and was looking up at Deneen. "Whatever you wish, Alan," she said simply.

Deneen cursed. She sensed his pain. "Stay, Alan! Fight!" She was like a flame now, all her supple form vitalized. "We can't let these people die!"

"Right!" said the man with an effort. "Meredith—perhaps Zorr was not wrong. We're not dead yet. Gregory!" he ordered sharply now. "Get a club. Back in the power-room. Ruth, stay with your uncle. Try to get

these people moving the way I want them to. I don't know just how an American is supposed to die," he finished, "but we can show 'em 'what's what' while we're alive. Those runts in skins will pay a price for this city. Meredith, throw that searchlight beam over there!"

He began ploughing a way through the crowd, swinging the longbow to his hand. Then the swift fire died in Ruth—she cried aloud.

Meredith's talk of Zorr was too strange to convince. Deneen was going to his death.

It was a grim, strange battle that began in the labyrinth of passageways, rooms, and circular halls, amid the darkness, and the confused movements of the gravity-crippled moon folk. Ruth refused to stay far from Deneen. She cried to Gregory, and urged her uncle to get into the fight. About them the soft Zorrians jostled and tried pathetically to hide, as if the energy and passion of the group were hurtful to them. Deneen wasted no time in niceties. He pushed the people back, behind him as he advanced to the front, giving orders to Meredith, who with signs and mute mental urging, translated the orders to the crowd. They were to retreat, press back, through the halls and corridors going upgorge. Those already within the area occupied by the skin-clad spearmen were beyond help.

Meredith's searchlight, playing here and there, revealed the attackers, squat men in knots and squads, criss-crossing the corridor intersections, advancing, slaughtering helpless, almost mute prey. It was now that Deneen learned that the moon people were not altogether voiceless. Broken sounds of terror filled the corridors, as if the stress of the situation worked upon atrophied organs of speech.

Then the longbow began to send its humming, winged death to halt that piteous scurrying. They backed away past the wrecked laboratory and power-room, into halls clear of debris. Meredith's searchlight illumined targets for Deneen. Thrown spears and club fell short of them as they retreated, pressing upon the bewildered Zorrians that were making for the passageways leading uptown.

It was a running battle, with unexpected developments. The club men burst out of side corridors, and there ensued fierce, short melees in the semi-gloom. The mass of the moon people acted as a neutralizer, preventing the active fighters from hand-to-hand contact, giving Deneen space wherein to work the deadly bow. Sprawled bodies dotted the room and halls left behind. Meredith was moving the mass with purpose, urging them to send their mental messages through all the city, to retreat to the council hall of Zorr.

"It's an amphitheatre, high up, at the end of the building," he explained to Deneen. "Only a few stairways lead to it. And most of the uptown folk can reach it before we can. Our best chance!"

Deneen scarcely heard. There was a tremendous jam in the corridor, and the fighting was close. But after a time the pressure at his back eased—the moon people immediately behind them had entered a wide spacing. Stairs led down to Deneen's left. He could see water, tossing, that glinted as Meredith flashed the searchlight.

"Arrows are going fast!" Deneen grunted to the scientist. He moved past Meredith and Ruth. "I'm all right, Alan," she reassured. She was looking around them.

"They understand, Deneen!" said Meredith in quick tones. "See them—all moving to that hallway over there. That leads towards the council chamber. Look!" he added—"the beast men! More of them. Coming up those stairs. Cutting the people off!"

"Where's Jim?" asked Ruth, a note of anxiety in her tone. "I've missed him!"

Gregory was nowhere to be seen.

THE contest grew grim. Deneen's arrows were almost gone. They were moving in a vast circular hallway that had stairs opening every score of feet to the water-filled lower rooms. Its center was a walled opening down which could be seen to better advantage the agitated river currents. But Gregory was not in the big chamber.

Deneen moved among the crowd. "Gregory!" he called futilely. Giving a short order to Meredith he pushed a way back to the corridor from which they had emerged.

Some yards down was a feebly-moving form, on hands and knees. Deneen felt a sinking in his breast, a swift premonition.

Meredith and Ruth were making for the opposite side of the circular patio beyond, and Deneen, without light, could not see whether the moving man was Gregory or one of the skin-clad foe. He called, undecided. Behind him, past the opening at center, was a confusion of attackers harrying the streaming moon people moving toward their objective. Hoarse shouting filled the air. Looking back Deneen could see Meredith's flashlight flitting about. Then the man in the corridor ahead cried feebly for help.

Deneen ran to him, slowed, and then cursed, almost calmly. His swift sense of tragedy was vindicated. A broken spear haft protruded from between the man's shoulders. It was Gregory.

There was little time for sorrow. Deneen hung the bow over his shoulders, lifted the desperately wounded man, and made a way back to the open circular chamber. At the junction of hall and patio he ran into two sulking figures just completing ascent of the stairs immediately to the left. Deneen tried to ease Gregory down, and the delay nearly cost his own life. A club blow glanced off his thick hair. As he reeled back a thrown spear tugged at the grey suiting near his shoulder, and his swimming senses, out of focus for a moment, made of his two attackers a dozen leaping foes, springing upon him over Gregory's feebly moving form.

Reflex memories of another world moved Deneen's striking. His torso pivoted to back a smashing right-cross of his clenched fist. The blow landed squarely in its swift side arc, against a leering jaw. Both went to the floor, but Deneen came up alone to plunge in headlong tackle under a thrown spear from the other assailant. The two of them, fighting in grim silence, smashed down upon Gregory, now curiously limp and still. The longbow hampered Deneen. He could not roll over. Smell of animal sweat was in his nostrils—a club flailed at his head, missed and was drawn back for another blow. Humping up on his knees Deneen smashed out with both hands alternately, savage drives that crumpled his opponent into inertness. Then he rose slowly, and turned.

Gregory's features were set. Deneen bent, and heard a whispered word.

"Ruth!" The moving lips stilled. Deneen looked closely into the wasted face. Gregory was dead.

It took a harsh effort of his will to rouse Deneen.

Gregory had been futile from the start, a harried man who had never recovered from the first shock of finding himself in another world. But he had been Jim Gregory. Deneen suddenly realized all the connotations of the name, the bridging to the world they had known. He had been one of four Americans, projected into space and time, and his death brought home with sharp force the alienness of that great city—the strangeness of the fight even then raging across the vast circular chamber beyond. But the emotion passed in Deneen. He remembered Ruth, and with one final look at Gregory's body, he ran past the stairs, around the walled opening, into the thick of the fray. Reaching Meredith, he voiced terse instructions.

Ruth cried out in pain as Deneen answered her question about Gregory. Meredith, almost exhausted, seemed to wilt at the news. But in face of growing peril they fought to keep moving.

CHAPTER XVI

Temporary Relief

AT last they gained the big corridor at the other end of the circular plaza, after fierce fighting in which Deneen shot most of his remaining arrows. The moon people were suffering terrible losses. They did not fight back—it was merely the packed number of them that gave semblance of a battle where the squat spear-men struck them. Meredith's flashlight was becoming a dangerous aid. The enemy, encouraged by the helpless attitude of the people in the corridors and halls, had begun to comprehend the connection between the flashing light and the winged missiles that cut them down. Scurrying about, yelling hoarsely, in groups of threes and fours, they edged in upon Deneen and his two companions, sensing that where the light flashed was the source of danger.

Mixed thus with the grey-clad, milling Zorrians, they were almost impossible to hit. Deneen sensed an unbalanced, persistent sort of courage in them. The very fact that they had come up the stairs to boldly attack as the water rose spoke for an absence of fear that was alien to primitive natures. The havoc wrought by the death-ray would have remained a life-long impression in normal savages. But these were now in an orgy of slaughter, and deliberately working toward the killing of the group around the strange eye of light. From every quarter spears began to rain toward the flash—spears that were recovered as the moon people milled helplessly about, recovered to be thrown again. Meredith's left arm was pierced.

Ruth took the light. Deneen, his shaggy head streaked with blood, growled approval. The woman had recovered from the momentary breakdown at news of Gregory's death. She stayed by her uncle, half-supporting the little man, whose strength had given way.

"The stairs!" he gasped, holding his bleeding arm. "They don't know about the other two flights. If we can reach the nearer stairs, the bow and arrows will stop them."

"Arrows nearly gone!" said Deneen sharply. "I'll save 'em. Keep that light out!" He had retrieved a thrown club from the ground, and began circling around through the confused mass, keeping Ruth and her uncle in center of his movements. The flashlight no longer showing their position, the venomous groups of the spear throwers worked by guess, and Deneen, dressed in the fashion of the moon folk, was a camouflaged tiger among sheep.

The strength of his iron sinews, the shock of his speed and weight, disposed of one group of assailants after another, and in the slow, dragging progress down the hall, not one of the spearmen entered the confines of the circle he stalked, to get at Ruth and Meredith.

Yet they were nearing the end. Even Deneen's iron endurance began to falter. It came to him that he had been without food for many hours of continued excitement and strain—he seemed to lack foundation—to fight by sheer effort of will. His whole body was bruised, and the pliant suiting which encased it, cut and bloody. The spearmen were vicious fighters, and each flurry in the crowd left Deneen weaker. The very weight of the pitiful moon folk, through which he had to push, began to be an insuperable obstacle. His breath blew in labored agony. Jim Gregory's death seemed a portent of their common fate.

He shouldered a way back to Ruth, guided by an answer to his call. Meredith was barely able to stand. His arm was bleeding profusely. "Vein cut, Deneen," he whispered. "I guess I'm done for!"

"Keep going," Deneen tried to say. He dropped the club, held Ruth close and, taking the searchlight from her hand, flashed it in a quick sweep. "They're making the stairs," he said with renewed vigor. "Keep going!"

The retreat up the long stairway was slow, a long, apparently interminable withdrawal from the lower sections of the city, and Deneen's strength came back. The moon folk labored up the endless ascent. Meredith, Ruth and Deneen brought up the rear, and now the searchlight and remaining arrows, working with deadly efficiency, kept the skin-clad attackers out of spear range. They crept slowly after the retreating company, leering faces showing in the light. Scores of them were inching up, unmindful of the many dead they had left behind them in the halls, of the group which had rashly tried to rush Deneen at the foot of the stairs. Somewhere outside were thousands of them, chanting a barbaric song of hate. Deneen occasionally bent to lift the failing Meredith along. In his mind hopeless words ran and re-ran. They were done for.

Came the time when he shot the last of his arrows. At periodic intervals in the long ascent the spearmen forgot the feathered death above them, and would suddenly charge up, yelling insanely. Deneen drove the last arrow home, and stood with the useless bow in his hands, gazing at the tumbling dead going down the tremendous flight of stairs amongst their fleeing fellows. The next charge would be the last.

Back of them the pressing, pitiful moon folk began moving faster. "The hall!" breathed Meredith faintly. "We made it!" Deneen roused himself. He placed one end of the bow on the step near his feet, bore his weight upon it, and unstrung the useless sinew. Working swiftly with the jacknife he had placed in the grey clothing, he cut a suitable length, and using the flashlight for lever, made a tourniquet over Meredith's arm to stop the flow of blood. There came to him as he worked, a whiff of fresh air, the tang of pines and green growth, and the coolness of night. Jerking the empty quiver from his shoulder, he hurled it down at the waiting fringe of spearmen, and went for Meredith. "Come on, Ruth!"

he muttered. "Stick close to me. Perhaps we can block these doors."

He found the moon people were already busy at the task. Deneen felt surprise as he moved with Meredith under an open sky. The hall of Zorr was up on the roof of the city. It was a vast amphitheatre, wanly lit by the risen moon, which showed low down on the southern horizon.

The sudden shift, the change of scene, the host of new impressions, taxed their minds. At first Deneen could not comprehend. The visible moon was a riddle. Where was the gorge wall? Then he saw the cliff outlines, at back of the concrete bowl, a great cleft in the wall which showed the open sky to the south and east and went up again towering majestically over the city roof, down-gorge. Little torch fires dotted the rim. Through the cool air came the far chant of the spearmen in the lower valley, out of sight around the curving left wing of the amphitheatre. Thousands of the bald people were gathered below Deneen and his party. He went up stone steps, guided to a platform by Meredith's instructions. Below them the crowd was eddying. In the wan sheen of the moon, Deneen could see streams of them moving to certain places along the walls, building barricades of some material they were transporting from the center of the amphitheatre. He twisted Meredith around, to look.

"They're blocking the stairways, and the elevator shafts. They've ripped out the bench rows in the center. They're fighting, Deneen. They understand!"

"Stay with him, Ruth!" the man muttered, putting the scientist down. He ran down the steps to an intermediate platform which led to the opening through which they had come. A pile of debris, cracked sections of long and solid material, had already been placed there, as if the people in the filling amphitheatre below, blocking the uptown exits, had waited for their fellows to finish, entering by the one doorway the enemy threatened.

Deneen worked lik a Trojan, calling orders, waving his arms. His authority was undisputed, and he felt glows and currents of understanding pass between him and the milling folk. They had a quick grasp of mind that interpreted his orders. The longer and heavier pieces of broken benches, of a substance like aluminum, were criss-crossed aslant the stair opening, and jammed beyond removal. The spears of the attackers began coming through toward the end, but the foundation of the jam once laid, its background rapidly filled, and Deneen saw with satisfaction that nothing less than artillery could force a way through that entrance. He went back to Meredith.

"We're safe for the moment—if those other exits are well blocked. I'm going down to see. How do you feel, Dr. Meredith?"

Meredith muttered unintelligently. He was almost spent. Deneen sensed it, and so did Ruth, who was now crying brokenly as she knelt by her uncle. "Get down again, Deneen," the scientist whispered. 'Never mind me, I tell you. I'm finished. See about those doors."

Deneen went down again, this time crossing the middle platform to descend other steps that curved the whole width of the great bowl. Mingling with the crowd on the floor of the amphitheatre he worked grimly, trying to shut out of his mind an obvious conclusion. Once securely blocked in they were safe, but only till the body of the horde entered the city. Once the yelling thousands found their way over the swelled river, the walls of the hall of Zorr, apparently impregnable, would offer little resistance. For though the rear of the amphitheatre dropped off into space, separated by hundreds of yards from the gorge side, its flanking walls must be connected to the city. Deneen could picture the spear throwers coming in hundreds over the roof of the half-wrecked city, to peer over the rims, and finally let themselves down to the slaughter in the packed arena. Deneen almost groaned as he looked at the soft-eyed people that everywhere surrounded him, entreating with their mute expressiveness. They were hung up at the top of the city, like sheep waiting in a pen for the coming of death.

He went back up the stone steps and reached Meredith to find the scientist and Ruth surrounded by the moon folk. Pillows propped up the dying man, soft blankets, stripe of the grey clothing. Deneen cleared room around him. He spoke tersely.

"We're safe, for some hours, Dr. Meredith. How do you feel?

"Take me up, Alan," said Meredith, his voice surprisingly strong. "Move me to the throne of Zorr. That seat at top of the stairs," he moved his head. "I feel Zorr is near me now."

Ruth cried. Deneen, followed by Ruth and the close-pressing folk, took Meredith along the top of the curving series of steps to a structure of pillars and roof and ornamental frieze work that was outlined in graceful winged shapes against the sky. Within the solid stone walls was an upholstered interior, a protrusion like a wide seat overlooking the bowl.

From this position the whole amphitheatre opened up. It was nearly filled with a solid mass of upturned faces. Deneen felt the play of strange currents—disembodied calls and voicings and urgings.

"What are they doing down below, Alan," Meredith startled him by asking evenly. "The beast men—are they marching up the valley?"

"I think so," muttered Deneen. They were crowded in the small space. Ruth was in the circle of his right arm. Meredith reached forth a hand. He lay back on the padded chair-like throne, but his eyes were closed to the view below. His groping hand touched Deneen's bruised, blood-stained face, ran over the thick beard. Then the light fingers shifted to Ruth, patted her bowed head.

"Get food for her, Alan. These people have tiny slabs, wrapped in a sort of paper, that suffice to feed them. They lack certain elements for our bodies. That's why Gregory's mind gave way. We were both half-starved, dying by inches. That's why I will never recover from that loss of blood. But get the food for her, Alan. It helps." He lay still for a while.

"They'll understand," he muttered after a while. "Some of their fear is passing. They feel someone among them, Alan. Zorr! He is back! I see him!"

Ruth sobbed brokenly. Deneen looked over the audience in the great space below, then up to a star-splashed sky and across to the higher gorge wall, where the stone head of Washington poised over the waters of the dammed-up river. Meredith had lost his mind.

"Go on, Deneen. Get her food. Eat some yourself. Go and look over the walls once more, and see if the beast men are marching. Then come back to me. I have a story to tell you."

Deneen spoke to Ruth, then slowly moved out of the throne room. In his mind mists seemed to be forming, and within them appeared the face of a man with great, dark wells of eyes. Deneen passed a hand across his blood-caked feature. The strain was telling upon him.

CHAPTER XVII

The Epic of Destruction

FAR strains of a wild chanting came through the night. But a change seemed to have come over the moon folk. The confused sense of strain, as of myriad inaudible voices making themselves heard, passed, was gone. The crowd seemed to be still attentive. But the change was brief. A restlessness permeated the mass in the amphitheatre again, and Deneen, stepping down the stairs, saw the vision of mists and faces fade away in his mind, saw the great dark eyes stare as if entreatingly, then vanish. He muttered a bit impatiently. To normal vision the scene was weird and strange enough.

He found the folk uncannily quick to grasp meanings when he spoke of food. They seemed to be reassuring him that Ruth would be attended to. He was given packages like the ones he had taken for chewing gum on board the rocket ship. The material inside had a pleasant, slightly acrid taste. He was served water, cool and clear, and pressing through the crowd to ascertain its source, saw a fountain niched in the wall, almost a duplicate of those he had seen in hotels back in New York.

Sound of the far chant was monotonous, undying. As Deneen's head began to clear, and he felt a warmth of vigor due to the packeted food, there arose in him a sudden flood of disbelief.

He had been moving almost incessantly since the fall of the rocket ship into the gorge, and his suppressed thoughts, finding vent now, suggested question after question. But despite his instinctive mental rejection of the events he had passed through, the thing was there before him—a vast bowl packed with thousands of people, overhung with the nebulously streaked sky. Barricaded doorways and lift shafts, held out the attackers. He went to the rim of the amphitheatre, where it overhung the gorge, and looked down at the river. It had swelled, and was a flat black road winding upgorge. The current had practically stopped, and in the starlight the water looked like an attenuated lake pulled out through the crevice in the earth. Down past the city it was beginning to spill over the barrier of earth, and a low roar voiced the return of the fall to its original bed.

Deneen moved across the amphitheatre. His head had almost ceased to pain him. The packeted food was wonderfully restorative. He could now judge their position more rationally. The lower valley was still wreathed in smoke. Thousands of ruddy lights were moving on both sides of the river, and a scattering line of them in the center told of the dried bed of the stream, filling again as the water spilled into it, driving the beast-men back to the banks. The horde was coming up, the noise of its chant rising above the roar of falling waters.

Deneen reached the left side of the bowl of Zorr. Something leaped up in his tired body, a flame of hope. It would not be easy for the torch men to come over the roofs of the city and spill over the wall of the amphitheatre. For the hall of Zorr was a detached arena, an immense bowl of concrete separated near its top from the structure of the city. The connection was many yards below Deneen. He turned and made his way to the other end. Upgorge the position from point of view of defense was yet more secure. For beyond the amphitheatre, the city fell away, petering out into tongues and pillars of the concrete-like building stuff, edging into the narrowing defile. It was practically impossible for men to climb up that way. And the other end could be scaled only by building some sort of elevation beneath the wall.

The chanting in the valley below lost its grim message of immediate destruction. Deneen made his way back to Meredith, lifting his gaze, as he moved through the helpless folk, to the throne seat of Zorr that rose, a solitary structure at top of the series of curved stairways.

To his relieved surprise, he found the scientist in better condition than before he had left. Meredith's eyes were still closed, but his breathing was smoother. Deneen noticed bandaging—swathings of the greyish cloth, around his arm. Ruth and two of the moon folks were in attendance upon him. The outside of the throne chamber was crowded with anxious scores of others. And Deneen received a sharp sense of kinship now. One of the two by Ruth, a woman, had a cape thrown over head and shoulders. Head covered in this fashion, her whole manner and expression was startlingly familiar to Deneen. He entered the stone chamber, and sat on the wide throne chair beside the scientist.

"We'll be all right," he reassured, briefly explaining about the walls. "They'll have to get over the dam—that's a problem right there. And after that, scaling these walls won't be a picnic. We can get some of that bench material and break it up into long spears. Let 'em come."

"Deneen," groaned Meredith. His fingers groped. "Alan! Ruth!" He touched both their faces. "Tell me, Deneen—what does this place look like, filled with people? I can't see."

Deneen spoke evenly. "And downgorge," he concluded, "The city roof can be plainly seen, even to the hole above the laboratory, where the fellows on the rim rolled rocks. They can't get to us by way of the roofs very easily."

"I wasn't thinking of that," said Meredith. His voice had lost its half wild note. "Deneen—I seem to have wakened from strange dreams. Perhaps you thought me mad with all this talk of Zorr, and prophecy. But—" he stopped suddenly.

They all listened to a shrieking fire which filled the air. Over the great bowl swept a long rocketship, ghostly grey in the moonlight, trailing its white vapor plumes. It circled above them, then vanished downgorge.

"The last of them, perhaps," muttered Meredith. "Perhaps bearing the body of Zorr. Deneen," he said in stronger tones, "prop me up. I was not entirely mad. Listen!"

HIS voice began recital without effort, very calmly, as if he were lecturing on scientific data. "I've pieced this all together during my stay here," he commenced. "At first Gregory and I nearly died, from the sheer strain of those voiceless questions tearing at our minds. It must be some sort of radiation that the brains of these people produce, that beats on the borders of our cruder mental apparatus. Perhaps it is due to the excitement they

are laboring under. For Gregory and I were made captive by bewildered people, Deneen. People caught in the supreme crisis of their race, thrown into a strange world, far more terrifying to them than it was to us. But I'm straying," he muttered, a slight cough breaking through his lips. Ruth took water in a small cup from one of the nurses and held it to wet the dry mouth.

"After growing accustomed to our position here," the scientist continued, "I found those books written in English. It is best to begin from the point that that history referred to. The four of us date back a bit further. Deneen—when we woke in that wrecked laboratory, and I made a guess we had been in a state of suspended animation for years, I never dreamed the period of time was to be reckoned in millions of years."

"But how on earth?" Deneen's question died as he looked out over the vast bowl to the shadowy stone face on the opposite wall of the gorge.

"You'll find the technical matter concerning my method in that wrecked laboratory, in the corner where we got the searchlight. I wrote you about it, when you were at college. You remember Plank, and Bohr and Heisenberg, all the researches into the new physics, and how I proposed, with that artificial electron stream, set into circular motions by magnetic fields, to break up the atomic systems. Well, I gave you a hint of what surprising, unexpected results came from my experiments. The reality, which Prof. Hitchcock alone of all my associates suspected, was that I succeeded in shifting the electrons apart, spreading the energy rings to different planes, and at a critical moment, suddenly all energy disappeared.

"Scientists and philosophers had dreamed of that for ages, and science had come to assert that such a result could be obtained by causing the atomic nucleus to swallow its attendant electrons. But this would mean not merely the disappearance of energy in a final blaze, but the utter annihilation of matter as well. What happened in my experiments however, was the utter frigidity, the utter stilling of the electron whirl, keeping the ether in the strained material state, yet immobile. You'll find all the data, Deneen. The greatest discovery up to our time."

"The greatest discovery of all time," agreed Deneen. "Time as we knew it."

"Well—what happened to us is that, inadvertently, due to carelessness, we were caught in a space wherein energy, the flux and the changes of matter, absolutely vanished. Something went wrong with the time switch, and a current established itself in the tubes, flowing ceaselessly, endlessly, conducted by matter beyond decay, preserving that shell around us of plaster and wood and the glass window absolutely intact. Four million years sounds almost incredible, but the truth is that had not a whole mountain jarred down upon us, breaking by sheer shock of mass some little link in the conducting chain, we might well have remained, we four humans and the cat, utterly immobile for billions of years—the matter of us unchanged, frozen, while suns and planets and systems changed and died and were formed again."

Deneen looked over the moonlit amphitheatre, and the grey-clad mass of the rocket folk. Ruth came to him, and he put his arm about her. A sense of awe oppressed them both.

"Yes—the thing which happened to us is technically explainable," continued Meredith. "But from a broader view, there was in it the Will of God, Deneen. O, I'm not growing primitive as I face death. You will agree with me.

"For New York, and all the world we knew, did not last very long after that accident in the Worth building. The histories mention the date 1940. Names of countries and trends of events show that it was 1940 A.D. ten years after we were whisked out of the currents of life. Just what the city of New York did about that amazing phenomenom of the laboratory which no power of acetylene torch or explosive could force, what our families and friends and relatives did and said about our plight, is forever buried with the past. We must have been visible through the window, the four of us, yet no earthly power, even artillery, could nick that glass. I can see Hitchcock frantically searching my notebooks. Perhaps he came to know why we could not be reached. Perhaps Mayor Walker addressed the throngs of sightseers, informing them that New York again led the world in curiosities. It must have been the miracle of the age. But the people of earth had little time left to wonder about anything."

He shifted as if to gather breath. "The first book, written by a master of style and expression, refer to events we know of personally. The British Empire was crumbling, losing its grip in the seething east. Japan and China, after several preliminary skirmishes, locked in a death grapple that was gradually drawing in all the nations of earth. Germany went Bolshevik, led by its defiant youth, who refused to bear the burden of debt. The economic system of Western Civilization was falling to pieces, and over our proud cities hovered the spectre of chaos.

"The United States was building a huge navy and army, preparatory to its inevitable plunge into the cauldron. What would have been the outcome of this madness is a matter of inference, for something came to stop the suicidal hatreds of the human race, something which in a few short months accomplished what ages had failed to do, impressed upon men their common humanity, their common lot on the planet.

"AS if by magic the war passions died, and fifteen hundred million souls prayed to the various aspects they knew of God. For destruction was upon them. It was as if the Spirit of the Universe had tired of their futile narrowness, and was finished with them and their kind." The words of the speaker trembled—he moistened his lips before continuing.

"The observers on Mt. Wilson, at the 100-inch Hooker telescope, were first to see it, a new mark on their photographic plates, near the tail of the Great Bear. It was taken for a small comet, entering the solar system. Some advanced the theory of a trans-plutonian planet. But as the thing grew in the heavens, and various observatories pooled their calculations, alarm began to spread, and it spread from scientist to layman. It spread quicker than any astronomical discovery had ever passed to the multitude. The newspapers increased their references to it, and screaming headlines voiced the imminent end of the world. For the growing body in the sky was neither planet nor comet, but a vast dark mass, an almost extinct

sun of vast proportions. And at the velocity of one hundred miles a second, it was headed directly for collision with our sun and its attendant planets."

Deneen and Ruth were very still. The gorge wall opposite, the star-splashed sky, were silent witnesses to the epic, as the tale unfolded.

"The confusion in the big cities, throughout all the civilized countries of earth," Meredith went on, "was indescribable. The story from this point taxes the powers of the writer. At first there was general disbelief. But among scientific men the grim reality of the impending cataclysm soon became apparent. And as name after name of great scientists—Eddington, Einstein, Jeans, and hosts of others vouched for the truth of the lurid prophecies in the papers, the civilized world went into an orgy of despair. It finally ebbed to entreaty, to a great surge of religious feeling, in the face of powers the scientific knowledge of men could neither evade nor control.

"Humanity was utterly helpless. All its arrogance, its boasts of mastery over Nature, were refuted. Through their brilliantly-lighted streets they eddied, their impotent tools and machinery, unable to deviate by a hair's breadth the onward rush of the great orbs coming together in space. The writer reports that cynical philosophers held meetings, united by the great stress, and drank solemnly to old George Bernard Shaw's toast mocking the exit of humanity from the scene. But from the doomed millions, there arose a piteous cry.

"For soon it became apparent that this was not some false rumor, some scientific hoax. The bushmen in the Kalahari desert, the Eskimo in the Arctic, every living thing, came to know of the nearing sun. It grew to blot out the stars, and take on a ghostly reddish glow. And the oceans of the earth began to stir, to encroach upon the coasts."

Meredith's tone was weakening, as if the reconstructed events in his mind were weighing upon him. Ruth asked again for water, and was understood at once by the hovering nurses. About the throne seat the crowd of bald folk was very still, as if they were following Meredith's tale.

"All the planets began to show marked perturbances," went on the ebbing voice. "But soon astronomical observations and reports became impossible. No one cared any longer, because the phenomenom in the heavens was apparent to the naked eye, and the stirring oceans began taking their toll of lives. The seacoast people did not reach the interiors of the continents in time. Gigantic tides wiped out New York, Boston, and San Francisco. Grey-green water moved completely over all the lowlands of seacoast Europe and the low coast lines of other continents. All organization, all planning, vanished. Thrown back upon their primitive instincts, men fled and sought the highlands, and cowered before the impending doom.

But there was no salvation anywhere. The tides increased, and as the great body grew in the sky a new horror was added to the travail of the world. Cracks began to open in the surface of the earth, belching forth lava. All the solid crust was agitated and heaved by the powerful tidal stresses operating on the fluid or semi-fluid interior. Mountain ranges buckled up, and parts of continents sank down as the fiery understuff began to slowly moil. By this time the approaching sun was bigger than the full moon, glowing now with a mixture of dull red and the reflected sheen of our own sunlight."

CHAPTER XVIII

The Coming of Zorr

MEREDITH ceased. Deneen looked with unseeing eyes at the massed moonfolk. He was reconstructing that terrible picture of the doomed solar system, and various thoughts were forming in his mind, to account for the two suns and the strange sky under which they had awakened. He scarcely heard the shriek of the rocket ship, returning to pass over the amphitheatre.

"The writer of these histories engraved in steel," went on the scientist, "no longer follows detail. From the phenomena he had already described, I judge the nearing sun to have already perturbed the earth out of its orbit, swinging it closer to our own orb and the advancing star. Only very close bodies, even of such gigantic size, could produce tides in the very matter of the earth. The sun itself must have been close to the disruption point.

"Yet there was no direct collision with the other star. The details of the great catastrophe are somewhat misplaced, because the writing was probably done many years after, and by one not too rigidly scientific. But, however, the solar system was disrupted, disrupted it was. It was a gigantic cataclysm. As the star approached, the planets were twisted and warped out of their courses, and ploughed on, colossal masses of matter in the agitated ether.

"Perhaps Jupiter and Saturn collided, or grazed one another, for the tale reports terrible heat waves striking the earth in the last stages. Perhaps it was the sun's matter, streaming out into the void as the giant alien body passed—vast tongues of flaming gas that seared space for hundreds of thousands, perhaps millions of miles. But the earth escaped these Titanic flame jets that would have shrivelled it to ashes. The earth and its wildly perturbed moon were caught in the great gravitational eddy of the passing star, and whisked away.

"Behind us was left the disordered system of our own sun, left, probably, to a series of stupendous collisions as the major and minor planets spun closer and then into their disturbed primary." Meredith's breast heaved. "That, Deneen, seems like the work of some Supreme Power, closing a chapter in the history of the Universe exactly as it had opened. You remember that it was a passing star, disrupting the ancient sun, that gave birth to the system in the midst of which life evolved, and it was a passing star that broke that system up."

The speaker labored, he coughed as if the burden of the tale were growing upon him. Above them the air was again cleft by the long rocket ship, circling lower. Deneen held Ruth close. The full meaning of Meredith's words was coming home to them, and they saw back into long vistas of time and space. The faces of the bald folk seemed to lose strangeness. All that host of them in the bowl of the amphitheatre became a symbol, and a slow light of comprehension dawned in Deneen's mind. Meredith was fighting to go on.

"Just how the earth, alone of all the planets, was plucked from the holocaust of destruction, and carried away on

an incredible voyage through the skies, attached to another sun, is perhaps explainable by the ordinary laws of celestial mechanics, either those of Newton or Einstein. It must be so explainable. The Universe works in fixed ways, Deneen. Yet there was in it the hand of God. For the alien sun, ploughing by close to our system, twisting it to chaos and taking away the earth, took man along, took life along—life that survived the Titanic disruption.

"It seems, though the books are not quite clear in these details, that a band of Americans had developed a rocketship capable of great speed. The probable facts are that these ships were being developed by the War Department in preparation for its part in the great struggle raging among the nations. War is always a mighty stimulus to invention. In any case, whatever the details, a band of Americans, led by one Reynolds, had possession of several of these ships, or obtained possession.

"Perhaps Reynolds was an army man himself. At any rate he was a man of decision and intelligence. The probable purpose of his use for the rocket ships was a wild hope of escaping from the solar system before the oncoming sun disrupted it. But as the rocketships must have been quite primitive, and the art of navigating space utterly beyond the experience of any mortal, he may have hesitated till too late, hoping as all the world must have hoped, that somehow something would intervene to prevent the holocaust.

"Once the planets began to feel the gravitational twist of the approaching sun, it was too late. To venture out into that wildly disturbed space meant undoubted suicide. So it was that this group, somewhere in the interior of the continent, far from the heaving seas, lived to see the solar system pulled into chaos, and themselves whisked away."

Meredith was silent for a long time. Ruth was quite rigid now. Even the far chanting of the horde, coming to destroy them, seemed of little moment. For they were looking back into the dim mists of Time, a man and woman looking back to the annihilation of worlds. The nebulousity in the sky, that had become familiar, stood now as a tremendous symbol of the change they had lived to see.

Meredith took up the tale, fighting the creep of nausea, the darkness of sense oblivion from which he would never awaken.

YET now, even as his breath quickened, and the nausea threatened to overcome him, some queer energy sustained the scientist. "Deneen—I'll try to finish! If I fail perhaps you'll find the books—you will live to find them. You must. All the details are there—the details of Reynolds and his party, escaping from the lava-scourged earth to the moon. The moon had been twisted in an orbit close to the earth. It filled half the sky. It had gathered an envelope of mixed gases, perhaps torn off Venus when our doomed sister planet was caught between two attractions and, twisted out of orbital balance, plunged into the sun. The details of that escape, from the earth to the moon, the conditions here and there, all these you will find. I'll pass over them briefly. For the most important facts are those that bear upon these people around us—people whom the writers of those books never knew." He struggled to sit erect, despite the tearful protests of Ruth.

"Listen, my boy, listen," the dying man persisted with strange intensity. Deneen supported him.

"Reynolds and his party were the greatest pioneers in the history of the Universe as we know it. They shot themselves off the increasingly uninhabitable world, in their primitive rocket boats. Along with them they took, besides tools, a varied collection of animals and birds and seeds—the story of Noah again, in a grander tragedy. Read the details, Alan—a story for the ages, an epic of the courage of our kind, and of an inscrutable Destiny. For Reynolds and his party survived. The moon's interior, far more solid than the earth's, did not yield to the great tidal stresses—the whole globe was swept along the lines of force, but the surface was relatively stable. Some giant twisting however, probably in the first days of the solar system's breakup, had opened a mighty chasm in its surface, miles deep, and running for hundreds of miles over the pitted lunar landscape. In this great cleft the captured atmosphere settled, and conditions were near enough to those of earth to allow Reynolds and most of his band, who landed safely there, to survive." Meredith stopped.

His eyes were now open, staring over the crowd in the amphitheatre of Zorr. The rocket ship came back again, and began circling steadily over the bowl.

"I believe I can finish, Deneen," the scientist gasped, taking in the scene with his wide, strange gaze. "Reynolds and his band, whether for good or ill, were selected by Fate as the sole survivors of the human race. On earth the shifting oceans, pouring their countless millions of tons of waters over most of the land, and the inner shifts of the molten interior that brought the highlands down and lifted them again, all these changes wiped out life, land life as we knew it. And somewhere on what had been the eastern coast of North America, at first under water, then lifted high above even the great tides by an upheaval of the coast, was the wreckage of New York City, an indescribable ruin, Deneen.

"The writer of the first part of the histories did not dwell on this, for to him New York was just one of many cities. He did not know that somewhere in that tangle of battered remains was a room that even the stress of tides and collapsing buildings could not break—a room in the interior of which three men, a woman and a cat were frozen into atomic immobility. No, Deneen, had the first writer known of that and what was to transpire afterward, he would not have had, in his work, a note of helpless interrogation, he would not have questioned Destiny as he did. He would have had faith, Alan—the faith of Zorr, the faith I have now, dying, that all has not happened in vain."

Deneen's great shoulders were as immobile as a statue's. Ruth had knelt, her head bowed upon the seat. In that crash of worlds, though it seemed a detail forgotten by Meredith, had come the death of their people, her family and Deneen's, and all the friends they had known.

"Look! The rocket ship! It's landing!" Meredith sat up straighter. He tried to stand. That strange intensity of energy overcoming his weakness seemed to rise in him. "They're clearing a space for the ship to land. See—see how they gather around it. I feel things, Deneen!" He quivered. "Zorr! Zorr is in that ship—the body of Zorr!" He slumped suddenly and lay back with closed eyes, breathing hoarsely.

"I'll go down and see," said Deneen stirring. Meredith's hand clutched his arm.

"Not yet. Let me finish.

"YOU know something of evolution, both of you. You know the effect of environment. Well, Reynolds and those with him were squeezed in the jaws of environment. They had come through a terrible experience, and it had seared their souls. There in the Great Valley, as they came to call the cleft in the moon, they framed themselves systems of conduct and government that held for thousands of years, systems free from the complexity and antagonism of the competitive system of society upon earth. The volcanic soil, watered by the acquired atmosphere, grew marvelously fertile, and the small stock of life they had taken from the earth multiplied and grew and filled the new world. There were scarcely any carnivora, except dogs.

"Now while the forces of evolution and environment were acting on the generations being born on the moon, both that body and the earth were sweeping along through space in the wake of the giant sun that had captured them. The skies began to change, though even considering the speed of the earth's new primary, they must have changed slowly. But Time is long, my children. The skies changed. The men who had escaped to the moon built a city in the Great Valley, and through variation and mutation and the action of natural selection, they began to differ from men as we knew them.

"They developed some qualities and lost others. And all the while, as the centuries rolled into ages, the ages into aeons, as the moon, operated on by tidal thrusts, began to sweep in a larger orbit, growing smaller in earthly skies—on the earth itself a queer thing came to pass, like an echo of life, a striving. You will understand, Deneen," he muttered. "We saw it."

"The hoppers," guessed Deneen. "But—"

"The traces of the old civilization of man gradually melted away into disintegration and rust," went on Meredith as if performing a rite. "As the centuries multiplied into scores of thousands of years, iron and steel and concrete were lost in the dissolving flux of the elements, or sank beneath the new layers of soil. Only two things survived as the scores of thousands of years grew to epochs, to a million, two, three, and finally four. One was a box-like incredible little affair on a mountain flank, where it had been lifted when everything else had withered away. Overhanging it was a great mass of stone, millions of tons in weight. Within it were four human beings and a cat. Wait!" he muttered, as Deneen tried to speak. "Don't stop me! This is my last hour, Alan!

"The other relic of human life," he took up at once, his whole body tensed to the effort—"was equally strange. It rose in the interior of a continent that had once been west from the Atlantic coast, but was now north, due to a shift in the earth's axis. An arm of the sea had flooded the section men once knew as the Mississippi Valley, and north of this sea, in a great upheaval that had elevated the old Black Hills of South Dakota, stood the likeness of the face of a man, chiseled in granite. A face that once had been part of a group. You must remember the Rushmore memorial, of Washington, Lincoln, Jefferson, and Roosevelt. The head of Washington, alone, escaped destruction in the uplift of the new mountains, and like a symbol and a memory of what had once been on earth it looked down over a gorge. The gorge we are in now, Alan."

"God!" said Deneen holding Ruth close. A jostling at his elbow awakened him. One of the rocket folk was pointing at Meredith, then down to the ship which had settled on the floor of the amphitheatre, and was now a big grey shape in the moonlight, half hidden by the pressing crowd. The chant in the gorge growing stronger, was a savage singsong in the night. Meredith's voice broke in on Deneen's questions.

"They're telling us that Zorr is down there—the body of Zorr. I know. Tell them to let us alone. I have to finish. I have to!" He raised himself up, to be caught and laid in a more comfortable position by Ruth and the tender nurses. Deneen made expressive signs to the messenger from the crowd in the bowl. "I'll be down in a minute," he reassured and turned to Meredith. "Doctor—don't excite yourself any more. I'm beginning to understand—to grasp the whole stupendous thing. You must live."

Meredith's fingers clutched him.

"Stay here, Deneen. And you Ruth. Don't leave me. You will not find me alive when you return. I'm dying. I've been dying for months. That packeted food cannot for long maintain our bodily forces. Remember that we are four million years apart from these people in the evolutionary scale. And that spear—it bled me to death, Deneen. I should be too weak to talk. But the same force, call it what you will, that kept Gregory and me alive because we knew you were coming, that same unexplainable thing will keep me going till I finish what I have to tell you. There are more things here than the ordinary laws of physiology. Come closer!"

Deneen lifted the scientist's head. Ruth held water to his lips. Meredith scarcely touched the cup. He pushed it away.

"You are beginning to grasp the thing, Deneen. Your guess was right about those hopping, demon-like beings, all that strange order of creatures that I said were not composed of protoplasmic material at all. Like a nightmare it seemed. Yet for the last million years, and up to a few score thousand years ago, the only land creatures on this globe were composed of that substance. In the sea however, the old orders survived. That is why you caught fish in the streams. The sea life never perished from the earth."

CHAPTER XIX

The Story of Chaos

THE minds of Deneen and Ruth went back to a morning by a river. They saw a silvery, twisting shape escaping from a crude net.

"But the hoppers?" asked Deneen a bit hoarsely. "How in the name of science or anything else can they be explained?"

"I can guess, Alan, more than guess, because part of the wisdom of Zorr is in me. The terrible lava waves, the upheavals which killed all land life, must have twisted and distorted the very constitution of protoplasm; it must, in fact, have wiped protoplasm out. But only from a strict and narrow, scientific view is life absolutely limited to protoplasm. Life as we know it, yes. But what of

that which is back of life, the push out of which life came, the cause of variation? No one knew, of course—even Zorr did not fully know. But you remember—protoplasm meant largely the carbon compounds. These compounds were due to a certain chemical integration which, in the last analysis, we said was due to a certain dance of the atoms, which caused the substance to differ from others. All empty words, groping in the dark, Deneen. Whatever it was, the terrible catastrophe warped the process in its beginnings, and the push of life, issuing again as the seething cataclysm ebbed, used other syntheses, other chemical combinations."

"Great guns!" muttered Deneen. Ruth was rigid. The visions in their minds seemed too great, too cosmic for their puny human emotions.

"This new order was partly the result of intense heat, and then of correspondingly intense cold. For the giant sun that had broken up the solar system had little heat of its own—it was nearly extinct. It stood in relation to the earth and moon in the way Jupiter must have served its satellites. As they left the disrupted solar system behind, the cold of outer space closed in over the traveling bodies. It must have been a gradual change—perhaps the two suns moved in some sort of revolution around one another before separating altogether.

"In any case, up on the moon, men, driven to invention, survived. They improved their city in the Great Valley, enclosed it, heated it by tapping the last remnants of sublunar fires and changed more fully from biologic animals with a top structure of brain to brain users in the real sense of the word. During those first epochs the history books were written and engraved on steel by the last author, who guessed at what the future would be like. Then, as the ages passed, and our old sun faded back into the firmament, the language of these men, written and oral, faded out. Whether it was the force of environment, the intense sympathy with one another, which created a new genius of man, absolutely lacking in envy or pugnaciousness, or whether it was a mutation, some sudden appearance of a kind better fitted to survive, is immaterial. A genus of man appeared on the moon, men who lived in a world of their own making, who transmitted thought directly. They came to know well that mystic land the borders of which our own race had reached, but failed to enter the psychic realm." Meredith shifted. "Yet these people were doomed. Thousands of years ago the wisest among them saw this, and tried to find a way out."

The scientist coughed again. His breath labored for a moment, but he surmounted the weakness. The queer energy, like an extraneous force, still animated the wasted shell of his body. Deneen and Ruth looked at the moon folk around them with new understanding.

"Now, Deneen, we come closer to our past in this colossal drama," went on the persistent voice of Meredith. "The moon men were artificially walled off from cold. They had everything of their own making. But their world was small. From time to time great tragedies came to it. The Great Valley, caused by a gravitational twist which nearly broke the moon in two, was not stable. It began to narrow, cracking the enclosures of the artificial world within it, opening this world to the hostile cosmos without.

"Always the developing race repaired the damage, but plainly did it come to them that some day there would be no shelter for them below the lunar surface. They tried to expand outward, and built a radiating, enclosed section of city in the lesser cracks leading to the great chasm. But the moon was losing its atmosphere. It was of a size too small to hold an atmosphere. And the people, children of a mechanical civilization that had fenced off Nature, had no adaptations in the stock, no means of changing to fit radically changed conditions. The one physiological adjustment they made, aside from the lesser ones in vocal cords and hair, was adaptation to the lessened gravity of the moon."

THE quick flow of his word stopped again. He was silent for some time. When he continued, Deneen noticed a change in the manner of the narrative, it was slower, and there was less reference to scientific explanation for the events it related.

"Zorr told me much of this, Alan—he conveyed it to me—the story of his people—caught on a frozen ball of matter in the sky, with great knowledge, their wisdom steadily growing, but with little physical strength or courage. They lost courage and the instinct to fight, and dared not brave the perils of a flight across space. There was nowhere to fly to, in any case. The earth in the first epochs, which lasted some two or three million years, was frozen, dead, except for the heaving seas. The moon folk developed telescopic powers of a magnitude beyond anything ever achieved, by means of amplification of light waves, and they could see every detail on the planet that was the motherland of life. But none dared make the leap across the ever-increasing distance, so that they might build a shelter before the cold stilled their efforts. The venture was impossible for them.

"And then came the time when the great red sun, entering new regions of sky, felt the pull of a mighty attraction. This gravitational center was a flaming orb, thousands of times bigger and hotter and brighter than the sun we once knew. The result of these complicated moves was that the red globe, with the earth and moon swinging around it, began to circle the blue star. Now do you begin to see, Deneen? It was under this sky that we awakened—a blue and red sun, and a great moon. Do you understand?"

"I understand," said Deneen simply. "I guessed at some such thing myself." Emotion was beginning to stir in him again. He continued evenly—"The hopping things and the rubber growths grew up under the new warmth, and covered the earth. But what about the other life, *our* life? What about the spear-men?"

"Shot across from the moon," said Meredith, and just the ghost of a smile was on his parched lips. "Shot across from the moon!"

Silence came over them. The far singsong chant was a cry of mystery now. Its menace seemed a small thing.

"Come closer," whispered Meredith. The queer flame of energy was ebbing within him. In the gloom of the throne room of Zorr his features showed their terrible emaciation to the crying Ruth as she bent over him. "Listen—children—" he heaved—"listen—

"Get these people to tell you later. Grow close to them, learn to understand them. The story of that long period on the moon must be replete with wonders. I can't tell even the little I know. I'm going."

"No! No!" Ruth cried aloud now.

"Children—the history of the spearmen is a brief one. The moon race was not absolutely selected—even applied eugenics did not stop the birth of an occasional abnormal individual. A group of these must have accumulated at some period of the past—just when I do not know. The details are vague, for Zorr could not always make me see. He made me see mostly in pictures. First of all—a vast gathering in the central plaza by the central city in the Great Valley—two rocketships, into which some of the moon folk entered taking with them fertile soil, seeds and animals. After this a period of darkness, then view of a world where vegetation grew huge and black and grotesque, but here and there in the blackness were streaks of green. Thus, I know, that the moon people shot seeds and animals and birds across space to the earth. Perhaps they were preparing a home for themselves deliberately. Just as an estimate I would say that it was probably fifty thousand years ago, as we once reckoned time, back in another system. The green vegetation, and the animals of flesh and blood, were almost killed off by the gravitational change they had once before survived. Perhaps in the ultimate composition of organic matter was the memory, mechanical or otherwise, of its homeland. At any rate the old protoplasmic life began to spread. It spread from the pole of this globe, the region into which it had deliberately been sent slowly southward. As it advanced the other type of existence disappeared. Neither animal nor plant could compete with the newcomers. It was the shadow of life Deneen, meeting life itself!"

Deneen nodded. "It was there before our eyes."

"Yes. For hundreds of miles down from the pole, the earth is now clothed in the familiar green it knew beneath another sun. The climate is comfortable and wonderfully energizing. Beyond, further south, the black vine jungles begin. Only streaks of green, advance guards borne by the wind, and straying pioneers among the birds and animals, reach the shores of the second ocean where we awakened.

"Further still, for thousands of miles around the equator, the vegetation and moving creatures are like the dream of some disordered mind. Yet, like a dream, Alan—they will fade. Zorr showed me a picture more shadowy than the rest—a picture of the future when the world will be a fairyland of color and beauty, and song—one vast garden and one vast city."

Coughing, he stopped. Deneen looked down into the amphitheatre. The crowd of moon folk was plainly agitated. It came to Deneen sharply that the singsong chant had ebbed away, and in its place was approaching a confused yelling. The spear-men had come over the dam!

BUT he did not move. For Meredith seemed to sense his thoughts. "Stay, Alan—just a moment longer." Wasted fingers held Deneen's arm.

"Zorr showed me the central plaza in the central city again. It was plainly another epoch, for the people, the buildings had changed. But again there were the rocketships. This time, however, instead of animals and plants, men were being put into them. A sorry lot of men, plainly abnormal. Whether they decided to emigrate to the earth, or were sent into exile, or whether those later Zorrians used them to experiment on the practicality of settlement I do not know. It was a terrible mistake, and for the past year the descendants of those legislators have paid for that mistake. Paid in blood and terror."

The scientist's fingers loosened on Deneen's arm. "Lift me up!" he said painfully. "I want to finish, looking upon those people, looking up at the sky. I want to look at the ship which holds the body of Zorr. The body, Alan. Zorr himself is here, beside me. He has kept me alive for the past hour. He is waiting for me, Deneen—to finish my task and go."

Horror showed in Ruth's face as she helped Deneen lift the wasted body of the scientist. But Meredith's wide eyes, his drawn features, held no trace of insanity. His tone was rational, weighted with a burden of appeal. Deneen held him up. "So that's how the spear-men got here?"

"Yes, that was the origin of the spear-men. Perhaps the Zorrians of that age, who sent them across, hoped they would somehow prepare the world for the rest. Their telescopes showed that the life they had sent over in a previous attempt, had grown wild, and in some cases predatory. You met the wolves, Deneen—the great wolves of the plain country. Dogs grown wild, gone back to their primordial state. The men on the moon were soft. They had no courage. The earth was no longer cold, but it held other dangers. So they sent an advance guard, condemned by their society perhaps.

"That advance guard grew. But it did not subdue the wilderness for the purposes of civilization. Perhaps they tried. There is the trace of an attempt to build a city along the shore of this nearer sea. But whether because life here was so much easier, or whether the abnormality of the settlers prepared a way for a throwback to primitive types of men, the race degenerated. It grew to a state in some ways lower than the lowest savages we had known. For here in this world there was no premium put on intelligence, on the best qualities of our kind.

"But one thing remained to them of their heritage—they never fought themselves. All other things they killed. As the centuries passed, the mold of evolution shaped them without fear; because they found here nothing to be afraid of; without intelligence, because food and shelter are to be had without strain; and their abnormal stock survived where once such a race would have been wiped out."

"They looked queer to me!" muttered Deneen.

"The drama draws to a close now, Alan. Zorr comes to take a part in it—Zorr, the greatest emperor the race has ever known—a leader the like of which man has never had. Yet he came when Fate elected to destroy his kind. Zorr was faced with a hopeless problem.

"The Great Valley began to narrow again, some thousands of years ago. The moon men, artificially bred, had to have atmosphere of a certain pressure. Amid terrible tragedies as their city world crashed open about them, they built out and around, sending tentacles of structure over the surface of the moon, compressing air into their living quarters by means of stupendous machinery. They can build, or rather pour, a crude city block together in an hour, once the machinery is ready. But the atmosphere of the moon was thinning steadily. The great pumps could not gather enough to keep the people alive. Perhaps some combustion in the Great Valley burned the air up, and they had not the hardihood to reach whatever other pockets of cold, low-lying atmosphere existed on the moon. The race was being

killed, inexorably. It was in these times of stress that Zorr was born. King of a doomed people, fated to see the flower of countless ages, the culture of the human adventure wither and die."

"Zorr!" said Ruth slowly. Her eyes were wide as she looked down at the grey rocketship in the amphitheatre.

"Perhaps it was the terrible responsibility, the weight of the doom upon them, that made Zorr what he became, and made his people what they are today," continued Meredith. "They came to know one another, to love their kind, to search out after the deeper riddles of the Universe. Zorr himself knew things, stupendous things that made of earthly philosophy as we once knew it, a childish questioning. He even saw the future dimly, and because he saw, he started the great migration of his race to the earth in the face of certain death.

"For death awaited the moon men here. The spear-men are spread over most of the grass lands. Lower, in some ways than most of the animals, for the animals represent normal evolutionary types, this race of insane bipeds knew but one religion, had but one focus for their distorted imaginations. Long ages before, when the earth was yet cold, their ancestors on the moon had seen through their powerful telescopes, overhanging this gorge, a great face—a human face etched in stone. Whether the knowledge of its origin was known, whether the steel-leaved books, with their story of the world we knew, were any real part of the historical knowledge of these people, I do not know. Even Zorr did not clearly know from where we came, though he realized the connection with the books. Four million years is a long time.

"Besides, it is difficult for one type of men to comprehend another. But the great face was there—undeniable, a human likeness in a world of ice and stone. When the earth warmed under the rays of the blue star, and they decided to try populating it, it was toward this gorge they aimed their ships. When, in a later era, men were sent with the ships, it was this gorge they headed for, and in its vicinity they settled. For this, Alan, was the gorge of Man.

CHAPTER XX

The Passing of Meredith

NOW Meredith's voice again began to peak upward, grow strained.

"And through the ages since their ancestors came, the spear-men have gathered beneath the god's face and sung strange litanies to the stars. Zorr made known to me some amazing secrets of life, Alan. At times I understood why these half beasts came to pay homage to the face—I understood the meaning of religion. Tonight I have no time to tell you. Just look back with me into the past, through the last ages, to these tribes lighting their council fires in the Gorge of Man. This was the focus of all their being—that miracle etched in stone. And tangled somewhere in the racial blood memories was the tradition and knowledge, kept in their consciousness by frequent harangues and speeches of their leaders, that some day an enemy was to come down from the moon and destroy them. The moon and the face, Deneen, these were the two gods of the spear-men, the source of all their chantings, the mind bonds which made them different from the beasts."

"I see," Deneen said, "the whole thing."

"Now from the moon came the Zorrians, to settle in the gorge beneath the god face. The war message went over the lands, carried by smoke signal, drum beat and runners. The whole race of the spear-men, the whole body of them, converged toward the gorge of man that was to them the Gorge of God. No army however inspired, no mass emotion however bitter, had equalled or can equal the insane, senseless purpose in the yelling horde which fills the ravines and covers the hills around us. To them the Zorrians are demons, devils come down from the moon, vulnerable devils that can be killed. And to the killing of them the whole race has come."

Meredith's eyes were staring over the vast bowl, across the gorge to the face of Washington. His arms were twitching queerly. He was plainly trying to rise to his feet, but the motions of his body were detached from consciousness.

"Do not confuse this horde with any earthly army as we once knew armies. It is insane, beatial and more. It will not rest till every Zorrian is speared and clubbed, till the last living trace of us is gone and only these walls remain. Like a terrible wave, Deneen, they descended upon the first Zorrians to come here, and their primitive lances and clubs have carried the day."

The queer twitching of his body increased.

"I want to stand up," he said jerkily. "To pay tribute—tribute to a great soul—to Zorr. Help me to my feet, Deneen—that I may see the ship which brought his body across space."

Deneen lifted him up. A fog seemed to be clearing in his own mind. That long epic tale, told with unnatural energy by a dying man, explained the sky and its phenomena, explained all the events he had accepted instinctively, but which his mind had been forced to reject. Stupendous as was the story, Deneen understood. He was strangely quiet. The yelling of the horde, nearer now, plainly within the city, affected him emotionally as once a charging football line had affected him—he felt a tension, he was confident, prepared, despite his bruised body. He lifted Meredith up.

"Zorr! The greatest soul that ever lived among the moon men." The scientist's wasted frame was all atremble now. "He was more than man, Deneen. He had lifted the veils of truth. For years, after coming to his full powers, he searched sky and earth and destiny with all the strength of his soul. For his people were being killed around him. The Great Valley began to collapse. What to do? Who may guess what Zorr suffered? These people are so connected mentally that the death of one hurts all. And they were dying by the thousands. There seemed no way of escape. Both suns are uninhabitable to flesh and blood—to cross the vast gulf of interstellar space was impossible, because the Zorrians, with all their mechanical power, had no very efficient means of travel.

"You must always remember, Deneen—that all the knowledge of these people served their life—and they did not want to travel. The spirit of adventure, of daring, simply does not exist among them. Yet Zorr, himself one of them, forced his soul through the veils of Truth—he saw other kinds of people—he dimly saw the future. And he ordered the Great Migration to the earth."

Meredith began to slump. A light seemed to die in his

face. His knees buckled. But he refused to sit. In a hoarse whisper he went on.

"Death met them here, Deneen—slaughter. The first succeeded in setting up the blue compass flame. They poured out a foundation for a city. Once, twice, they were wiped out by the spear-men, but the ever-increasing rocketships began to fill the gorge with them, and the spear-people drew back to wait for the gathering of the horde. Some of the ships fell on their journey through the earth's atmosphere, and their helpless crews perished. They were just experiments, those ships, Deneen—the substance that feeds the rocket vents with gas grows sticky as the speed of the vessel heats its walls, and from time to time they fail, and fail.

"I know," said Deneen simply, and thought of the awkward lever arrangement.

MEREDITH coughed. A paroxysm shook him. Ruth cried. "And I saw it all, Deneen." gasped the scientist. "After landing here in the midst of this terrible, piteous tragedy, something seemed to grip my brain, and from then on Zorr ruled my mind. I do not know who or what Zorr was. The name came to me, and the vision of a face. Perhaps at first he took us for some strange monsters of the past, with our crude passions. But he must have seen into the future, and known that the destiny of his race rested upon us. For he never let go of my mind. He holds it now." The speaker's body began to relax.

"It was I who saved the Zorrians, Deneen," he whispered. "They are utterly helpless. I sent ships over the spear-men, shooting their simple rocket guns—I threw up walls—and played searchlight flares over the face of Washington—tactics which held them back at first, though finally enraging them all the more. And I worked like a demon to perfect some weapon. The death-ray would have saved us."

His face was livid now.

"All the time, Deneen, I saw. Why did the Zorrians come here, to this gorge? Because of the stone face. The rest of the world was alien. Here was the symbol of Man and men. Once the spear-men killed their advance expedition, the others simply followed. That is the terrible tragedy of these people—when one is killed, the others move helplessly to the place, as if drawn by his pain and fear. They are all connected with invisible bonds. They kept coming to their death. The race was being killed on the moon, and killed here.

"Then, by a miracle, considered in any way you may look at it, did we four appear on the scene. The mass of stone over the laboratory fell, and the terrible jar broke the current flow in the ray bottles. The rigidity of the room saved our lives. We emerged. Zorr's pain-racked soul, searching the Universe for solution, saw in our appearance the will of Him whom he called the ruler of all times and places. Out of the past we came, to save the spirit of Man. Later, as I labored here, Deneen, I saw you—you and Ruth. Zorr made me see. I lived with you, through the forest and plain. You were the War Lord coming to save his people. I believe, Alan, for the things I have seen are too stupendous to admit doubt. Zorr sent his message to all his people, that you were coming, coming to save them. Zorr admired you, Deeneen. I do not know if he ever understood us, ever guessed at just what we were. But your strength and endurance and physical courage were marvelous miracles to Zorr. To him you were more than a man, for men as he knew them could not do what you did. The spear-men, to him, were less than animals; he did not understand them, but you, he saw into your mind, Deneen. He talked to you."

"Yes," said Deneen evenly. "I saw the face of Zorr. I heard a voice driving me north—always north. I thought I was going mad."

Meredith's knees gave way. He struggled mightily to speak but failed. They placed him back on the couch seat. Bending, Deneen heard faint words.

"Alan! You will save them! And help them to people this world! They need you, need your kind. You and Ruth, instruments of God—" a rattle was in his throat. He stiffened. His long effort was spent.

Dr. George Meredith, one of the ruling minds of the Worth laboratories in another time and system, was passing over the brink of existence.

The scientist lingered speechless, however, only his wide eyes expressing his knowledge of what was transpiring about him. Eyes that followed Deneen when the men left the throne seat. Ruth was torn by conflicting emotions Something in Deneen's manner, a tense purpose about him, spoke of a decision made. He uttered a reassurance and stepped away. She could see him, see his shock of tawny hair, the breadth of his great shoulders, as he pushed through the Zorrians. Once he was down the stairs, far down toward the amphitheatre center, then her vision blurred. The moonlight was tricky. She held her uncle in her arms, her wide eyes filled with anxiety. Deneen would hurry back to her.

The minutes dragged to a half hour, by the stained watch at her wrist. Meredith hung on to his thread of life. The tale he had told seemed to review itself to the woman. Above the huge bowl was the star-strewn sky. Wild confused yelling filled the night. It seemed at times that she could see the spear-men, coming over the city roof. But the moonlight was tricky. From the throne seat, full view of the downgorge roofs was cut off by the flanking left wall of the amphitheatre.

Back of them, through an opening in the stone shelter around the throne seat, she could see the face of the moon, and the nearer red fires of the spear-men. The moon folk around her were all looking toward the center of the bowl. The mental crying, as of anguish had died in her mind. There seemed a great lull in the atmosphere, broken only by the yelling of the attackers.

The minutes dragged. Then Ruth stiffened. She stared at the scene below. Deneen was entering the rocket ship. She could see the agitated moon folk about him. She saw him wave to her, then enter the ship. The folk scattered. A great silent cry of "Valor!" seemed to rise in Ruth's mind. Then the rocket gases hissed. She could hear them. The ship lifted, swept away over the crowd, veering off from the side wall of the bowl. It skimmed across her view, backgrounded by the gorge wall.

The cry of alarm died on Ruth's lips. There must be some reason for Deneen's action—it was a step taken to aid their escape. But how? She suddenly realized that Meredith was moving. He was twisting in her arms, his straining eyes gazing toward the rocket ship.

"Zorr!" he cried brokenly. "Zorr! The prophecy!"

Ruth was clamped as in a vise. There was an unearth-

ly glow in Meredith's straining eyes. The woman lifted her own gaze in the drifting ship above the amphitheatre. It floated away up-gorge. She watched it, some premonition closing like an icy hand over her heart.

After a time it turned. It was smaller, greyish in the distance. Then it began to come back. It dropped, went down almost out of sight in the ravine. Then, swiftly, it began to ascend at a long slant. She saw the smoke streak from its roar, heard a growing piercing screech of high pressure gases. The ship grew larger it seemed to shoot across her line of vision.

Then Ruth Meredith screamed, a cry of horror that came from her very soul. The big grey ship, driving at terrific speed, was headed directly for the gorge wall, where the stone face of Washington brooded over the river.

DENEEN had gone down the steps, crossed the platform, and descended to the floor of the bowl of Zorr, with his mind curiously calm, working evenly. There were no mists at back of his consciousness now, the face of Zorr, the insistent voice he had heard before the moon message appeared in the sky, was gone. Yet he moved objectively. Meredith's story had revived Deneen's stunned imagination. The yelling horde had lost its utter mystery. They were enemies, and this was war. The Zorrians' fight was his and Ruth's. The spear-men would not wait to discriminate.

He pushed a way among the mass of the moon folk to the rocketship, and looked in through the open door. There was something white and square and motionless in its interior, back between the seat rows. Deneen looked at it for some time. But he did not enter. He left the doorway, and walked to the edge of the bowl, to gaze down at the river. Studying the scene below a while, he shook his shaggy head and moved to the left wall, the side toward the roofs of the city. The whole dimly-lit upper surface of the buildings was alive—they crawled and moved beneath the flare of torches. The hordes of spear-men had crossed the swollen river, and had come up the main stairways to the attack.

Deneen went back to the concrete barrier directly overlooking the river. He watched the agitation below. The spear-men had waded across just before the falls, treading over the mass of the cliff that had blocked the waters. The river, spilling itself, grew very shallow, and Deneen could see a black line, like a string of ants carrying tiny fires, wading over. Perhaps the swift current had swept some over the dam, but like dogged insects the line of men kept on.

Deneen turned fully around. He was curiously calm. He placed his elbows on the low concrete railing at his back, and studied the mass of moon folk, studied the whole scene. The strangeness seemed to have ebbed from it. They faced him, hundreds of them—bald, large eyed, dumb, but undeniably, his kind. Some of them, with capes over head and shoulders looked perfectly normal. The cries of anguish had died in Deneen's mind. They seemed like an earthly crowd, an expectant, tense crowd. And now, like flashes on a screen, the stupendous drama of Meredith's story unfolded itself to Deneen. Some fifty yards away was the grey nose of the rocket ship. Meredith had said that in that ship was the body of Zorr. Had the scientist been mad? What was the white, square object in the ship's interior?

CHAPTER XXI

Deneen's Sacrifice

DENEEN'S gaze lifted over the throng, to the throne seat at the rear of the amphitheatre, beyond it to the gorge wall where the red watch fires of the spear-men were flickering stars against the sky. Hung in that sky was a vast golden globe. In center of that orb, a few days before, had glinted a signal, the notice of the death of Zorr.

The man grew restless. He went to the left wall of the bowl again, and looked over to the yelling mass of the spear-men. They would find some way up and over. It was impossible to fight them. The moon folk could not fight. Deneen wrestled with his problem.

Perhaps a few of the moon folk could be taken away on the rocket ship. Put down further back in the hills. But Meredith had said that the mountains were alive with the spear-men. Deneen's calculating gaze swung over the gorge, following the tiny fires on the rim, going into the tumbled wildness of the upriver ravine. The hills were full of them, prowling spear-throwers. One trip of the ship, however, with no return, meant leaving the hills and even the polar ocean entirely behind. He could do that, take Ruth and a few of the moon folk and go. His way of escape was ready to hand.

Yet the thought now was mechanical, detached. Meredith's long tale, told in sweat and agony, had fused purposes in Alan Deneen's mind. He could never leave the soft-eyed folk to be butchered. The very stars, sprinkled in their nebulous profusion across the sky, seemed to reprove the idea. Whether Zorr was a figment, a distortion of Meredith's failing mind or not, there was something beyond his own life, and even Ruth's at stake. Thought of the woman pained him for one savage, undecided moment, as he looked toward the raised throne seat.

Then his decision formed. Turning, he studied the scene in the gorge for the last time. Only after careful deliberation did he lift his gaze to the stone face on the opposite wall.

"The god face!" he muttered through his bruised lips. "The link that binds them together—their one unifying symbol." He was very rigid as a plan grew and formed in his mind. Then, as if awakening to need of haste, he turned and made a way to the rocketship. He had to hurry. He could not dwell on the thought of the woman he had left with Meredith. That way lay weakness, failure, a selfish flight that would leave him haunted forever. Besides, there was the chance that he would not die. The river was deep. It had risen in the ravine.

He waved his arms and shouted directions to the throng about the rocket ship. It parted to let him through. He could feel relief, a sort of mental singing in his brain, a great glad cry. They seemed to take his every move for a sign of salvation.

Deneen shook the feeling off. He waved to Ruth, and cursed dully at the thought of her sitting in the throne seat with the dying Meredith, looking down at him wondering. For a moment something rebelled in him. Why couldn't one of the moon men try it? It was a simple thing. But the rebellion died. They were like sheep,

these moon people. No nerve. Perhaps he would live through it.

Within the ship, far down the aisle toward the rear, he could see, as he entered, the square block of whitish substance. Deneen did not investigate. Without looking again either toward the vague block or outside toward the direction of the raised throne seat, he busied himself with the oval door of the rocket ship. A commandeered cape of the soft, metallic cloth, jammed between the raised oval and the ship's interior, held it open on its single pin. It was important that the door should remain open. Still moving with methodical haste, Deneen made a way to the lever desk. He must not stop to think—neither of Ruth nor of the white mass at the rear of the ship like a shrouded casket. His immediate task was to stop that bestial horde that was swarming over the city.

Doggedly, his grey eyes cold, Deneen shut out everything but the purpose in his mind. He threw the levers out slowly.

He was drifting over the river. The amphitheatre had dropped away, and was out of sight beneath the flooring at his feet. Evidence again that the rocketships had been hastily constructed. Curious how his mind ran on and on, moiling old thoughts. But gradually the things he had fought off gripped him. In the darkness of night, lit merely by the wan sheen of the moon, the scene around was haunting. He caught glimpses of hillsides, of growth clumps, of silvery rills coming through the mountains to pour into the swollen river. The face of Washington—huge, overhanging the gorge—retreated, seemed to pivot as the ship made a way upriver. Now, from the windows to the right, as he drifted, he could see the amphitheatre, the people, the throne seat of Zorr. And suddenly reaction gripped the man.

He could not do it. Ruth, left there alone. Meredith was dying, Gregory dead. She would be alone. She would die as they had died, shut off from the mental world of the moon people. They would all perish in any case. Even if the plan worked, and the spear-men fled the country, the moon people would die. They were too soft. Better to go back, to land in the bowl, to take Ruth and a few of the Zorrians away, far back past the polar sea. He could fight for the preservation of those few. It would be best. They were all doomed in any case. So his mind framed reasons, but through it all he knew that it was the call of life within himself that was fighting his decision. It was the call of life in his blood and bone that saw the wan-lit hill slopes as home, that knew he could live with his mate in that primitive, vast world. It was a call that cried against probable self-sacrifice.

HE was drifting slowly, barely holding the ship's altitude and speed upgorge. The amphitheatre, rotating slowly in perspective, was dropping back. It grew smaller. Finally Deneen turned the ship. The whole panorama of the twisting, swollen river, the city on its left bank, the myriad lights in the lower valley, was before him. The bowl of Zorr was now a round saucer, part of the bigger mass of the city. Its center was filled with greyish, shifting people. Details were indistinguishable at the distance.

The ship began to float back. Deneen's very arms seemed to quiver to the pull of the conflicting impulses in his mind. Whatever had to be done must be done at once. He had no time to reconnoiter. The spear-men would find a way over the wall.

He looked back now, as if some intangible force gripped his head and turned it. The indefinable white mass at the rear of the ship seemed aglow. Deneen half growled. Moonlight. Moonlight, he muttered. Imagination. Perhaps that mass of substance was not a shrouded casket at all—how could Meredith have known? And if it was the body of Zorr—Zorr was dead.

Then the voice spoke—he heard it as clearly as ever he had heard a voice.

"The face! Valor—the face of stone!"

Deneen's whole body was rigid. He looked back again. The shrouded object at the ship's rear was motionless—an inert object, with splashes of moonlight making its outlines vague. Deneen felt an impulse to veer the ship, to float away, lock the levers with the button on the switchboard to his left, and go back to that shrouded mass. Was there within it a man with great eyes? Zorr? Deneen's shaggy head shook. He fought for clear thought.

The gorge walls drifted past. He could see the face of Washington now, hanging over the chasm. The river was widening below him. A little way ahead it curved, following the ravine cut. That was the place he could jump—as the ship picked up speed, headed directly for the cliff below the stone chin of the memorial face. And now he saw the amphitheatre clearer. There seemed to be a black line breaking over the further wall. The spear-men!

Then it was that some external force seemed to grip him, to cause actions entirely contrary to the ones he willed. Sight of the horde spilling over the amphitheatre wall brought thought of Ruth, sharp and stabbing. But instead of veering the ship, he sent it nosing down. Down, down, till the narrowing ravine walls deflected the white smoke plumes of the gases. The whole phantasmagoria of the drama in the gorge—the myriad gleaming lights in the lower valley—crossing the water, dotting the ghostly white traces of the city of Zorr, moving over the roofs—it was all near now, and quite clear. He lifted the ship's nose, like a man in a trance, dimly realizing that he was carrying out the plan he had started with, against every effort of his will. He fed the Titanic rocket power to the ship's rear. Wind roared in the open doorway.

Methodically, unerringly, he sighted the great ship under his control, sighted it for the gorge wall beneath the great, balanced stone face. Then giving it full power, he locked the levers. In two quick strides he reached the doorway, though the shock of acceleration threw him a bit to one side. He recovered, and caught the framing with both hands, fighting the screaming wind. There was no time to lose. The ship was gaining altitude with frightful speed.

Ahead was the bend of the river, flowing for a hundred yards in the direction the ship was heading. It was like being shot out of a cannon, with that straight strip of deep water as a target. The slightest miscalculation would mean death. Deneen leaned out. He jumped.

His perceptions dulled. The speed of the forward fall blurred his senses. His whole body seemed to twist, to shrink in instinctive horror of the impending shock. The

oldest fear in the human race, the fear of falling, of dropping unsupported through space seized Deneen. But his reflexes worked to steady him. He did not tumble. He was driving down, down, at a steep slant. The river was leaping upward to meet him. He heard, dimly, a crash, the crash of the rocketship driving into stone. Then he struck, like a plummet, in the forward swipe of his fall.

The smash of his weight seemed to break him in two. Every muscle in his body had hardened to take the shock, and he struck the river surface feet first, inclined backward, with almost perfect judgment. But the forward rush, and the plunge of his speed, ripped him through the water with brutal, stunning force. He was spun over and over, his senses reeling, the whole world a bedlam of chaos and weight and suffocation.

Through it all he felt, more than heard, a greater roaring boom which shook the whole frame of the river bed. Eternities seemed to pass before he reached the surface.

Finally, when his senses had almost succumbed to the strain, he broke through. The air was wine to his laboring lungs. But he could not keep afloat. Partly this was due to his stunned condition—he moved gropingly, hurt by the terrific jar of the fall. The river was a whirling vortex. Deneen was thrown around like a chip. Huge washes of water swept him forward and back. Whirlpools sucked him below the surface. His struggles became weaker.

HE lost trace of time. Lost sense of his position. Some hard substance grated against him, and he gripped it with the desperation of blind instinct. Inching up on the solid support, he resisted the tug of waters.

Time passed. Faint trickles of perception came back to Deneen.

All about him was a rushing turmoil—a steady roaring which puzzled his dazed mind. Mingled with the volume of sound there were minor, fainter notes. Cries, a confused yelling that held queer strains of terror. Deneen's blurred gaze, groping for details, saw the gorge wall. A great hole, a jagged cleft marked the place where the stone head of Washington had brooded over the river. On the higher rims of the ravine, the red torchlights were moving. One by one they winked out. Deneen gazed at the star-strewn sky.

Thoughts moiled slowly in his mind. After a time he began to see with greater clarity, to orient himself.

He had been washed up on one of the tongues of the concrete structure which he had seen from the amphitheatre, jutting upgorge. The whole river had risen enormously. It was blocked by a solid mass of matter dropped into its old bed. Behind the face of Washington had been countless tons of soil and stone, and they had followed the memorial down. The shock had smashed the city of the moon people. Deneen began to make out details of the terrible cataclysm he had deliberately engineered. The amphitheatre itself seemed sagging over its smashed foundations, though the full shock of the avalanche had struck further down the gorge. The pent-up river had foamed over the outjutting of concrete, and was pouring into a new channel, at back of the bowl of Zorr, making a circuit of the city to enter its old bed beyond the first earth fall.

All these things the man saw—surmised. But he did not move. He had no strength. He wondered about Ruth. He wondered if he were permanently crippled. He dared not stir.

The water began to fall. Somewhere around the amphitheatre, it was gouging broader paths to its bed. A faint greyish light began to permeate the gorge. Deneen hung on the spur of concrete. Ruth! Ruth! Thought of her began to pain him, to send little trickles of energy back into his bruised frame.

He slid off his refuge, and landed in water some ten feet below. Shallow water. He seemed to be on a platform. The grey light strengthened as he labored around the concrete spurs toward the wrecked city. He was terribly weak. He finally slumped, unable to move. Only his thoughts ran on. Had the spear-men killed Ruth?

The answer of his mental question was the woman's voice, calling through the growing light.

"Alan! Alan!"

Deneen's strength came back. His legs were badly numbed—the knee joints stiffened by the shock of his meeting the water. But he could move. Ruth was unhurt. She had found him exhausted on a spur of building material level with the third story of the city of the Zorrians. All below was buried in earth and stone and by the collapse of the upper structures. As they slowly made a way over the rubble the woman answered Deneen's questions.

"Yes, Alan. Uncle died. He died as the noise of the fall began to fade away, died with a smile on his lips. His face, for a moment was normal again. Before that—" she shuddered.

"I know," said Deneen slowly. In the growing light he could see the moving figures, edging out of the wrecked city. "How about the spear-men? Didn't the ones entering the bowl take revenge for the destruction of their god?"

"They fled at once," replied Ruth. "Screaming terribly." Deneen thought of the faint yells of terror he had heard. "We'd better go down to the bigger valley and see," he muttered. "It fits in with your uncle's story, Ruth. The end of that stone face means the end of the spear-men, as far as united action goes. It was more than fear as we understood it, they must have felt when the face came down. It was like pulling the roots out of them."

The spear-men were gone. The lower valley was still smudged with smoke from a forest fire. Row on row of rocket-ships stood by the great concrete hangar, untouched. Everywhere were signs of the precipitate flight of the horde. Spears, clubs, torches. Where the river widened out to sea, numerous dugouts, left on the beach, testified to the number that had died in the gorge, or fled up the ravine, or away from the walls.

"We'll get that death-ray going again," said the man. "I'll dig it out. It was on the second floor, behind solid walls. Perhaps we can fix others up. The danger from the club-men is past."

THEY were close together again, alone on the beach. The slow-moving moon people, venturing out of their broken city, had not come down to the sea as yet, though Deneen could glimpse back in the ravine, grey shapes moving in the growing light of morning.

A wind ruffled the broad waters before them. The woman clung to Deneen. She had asked a thousand times

whether he was badly hurt. Her actions were now half instinctive, as if the full realization of what had occurred was just coming home to her.

"The most terrible moments of my life, Alan," she said simply. "As I crouched there with uncle dying in my arms, watching that ship strike the wall, watching that huge stone face slowly topple down. I scarcely noticed things after that. After uncle died, I left him and wandered about. Just by chance, looking over the wall of the bowl to the rising waters, I saw you in the moonlight, being tossed close to the walls. Life came back to me." She clung to him.

He took her in his great arms, all the softness of her, the woman he loved. They were alone in the world, alone of a race that had died in a stupendous cataclysm far back in time. He was bruised, half stunned by the ordeal through which he had passed. But he spoke reassuringly.

"Somehow I knew, Ruth. I wouldn't have done it otherwise. But the whole thing seemed a little beyond me. Seemed taken out of my hands. I've been wondering about that plan, why it came so suddenly to my mind. And the voice I heard—the voice of Zorr? Was Zorr real? If he was not, how explain everything? If your uncle was mad, and his story was wrong, then we are mad now. Look!"

He pointed across the sea. A great red sun was pushing up over the horizon.

"It fits, Ruth. We must believe. We must face this new life. Perhaps the voice I heard on the ship can be explained by psychological laws—I heard my own thoughts. If Zorr was dead, he could not have talked. And Zorr died on the moon. We ourselves saw the signal."

"I don't know, Alan!" the woman said, her gaze ranging the beach. "I don't know. The things we deal with are beyond us."

"Well—there's the city. In ruins, but things can be built up again. We'll get in touch with these people. It's up to us to save them, Ruth. They are practically helpless!"

She looked up into his bruised face.

"Alan? Can we live here? Can we ever know these people, as once we knew—"

"Yes," he said, rising above his own doubts. "It is our work, Ruth. Anyway, it's better than the wilderness, alone. Your children will have something to work on. Think of it," he shook her, ruffled her hair. "Perhaps the world will again know music and art and beauty. Perhaps we can build up, avoiding mistakes and profiting by the wisdom of these people. For in many ways they know more than we, far more. We have to live, Ruth. Here beneath the strange suns, and the moon that kept our kind alive. We have a task greater than ourselves. That task is to set the powers of these people free—to defend them—to start them in a new world. Will you help me?"

The wind swept over the sea. On the slopes around, the last dazed fugitives of an inferior race slunk away from the ravine where the god face had fallen in catastrophic thunder. As the morning light strengthened, like hesitating deer, the people of Zorr moved out among the debris, into the light of a still strange world, and set to work. Birds sang in trees beyond the beach sand. The great red sun cleared the horizon.

"A world to win, Alan!" the woman said, her supple body animated. "For our children and all the generations to come. A world for you to shape."

"And you?" he asked gently. "You will be content? You will forget the old ways, will remember them only with me, as a memory of our heritage?"

"I will forget, Alan," she said simply. "As I had already forgotten." He held her close. Her hair was in his face. "Where you go, there go I—your people shall be my people, and your gods my gods," she quoted softly, and in her eyes he read the echo of the pledge.

His arms tightened about her. After a time they turned and walked back toward the timid, bewildered Zorrians. Behind them the great red globe rose over the sea. It was like a promise of the glory to come.

THE END

A NEW PRIZE CONTEST Based on THIS MONTH'S COVER

Of late we have been hearing a great deal of comment, pro and con, on our usual covers depicting a part of a story in each issue. Some of our readers have objected to these covers as being too "wild," "undignified" and lacking in aesthetic appeal.

So, after thinking deeply on the subject, the editor presents with this issue a new idea in covers, and submits it for your consideration.

Paul has executed this cover; and the effect may be termed striking if not puzzling.

There is however, an idea behind the cover, and a good scientific one too. See if you can determine what the cover portrays, and what your thoughts and impressions are as you behold it either at close range or 15 feet away; with your eyes fully opened or squinting. As a word of caution: this cover does not refer to any story in the issue. See if you can win one of the prizes by giving the best and most accurate explanation of the cover.

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First Prize $15.00
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Please read the following rules carefully:

RULES ON THE JULY COVER PRIZE CONTEST

1. You are asked to state, in a letter of not more than 300 words, your explanation of what the cover on this issue represents.

2. The basis of the cover is scientific, and the letter therefore should contain the scientific explanation.

3. The letter may include sketches to make your meaning clear. Such sketches should be on a separate piece of paper, and clearly drawn. All letters should be typewritten *double spaced* or penned. Pencilled letters will not be considered.

4. Letters will be judged by their ingenuity, convincingness and scientific content by the editors of WONDER STORIES, whose judgment will be final.

5. The editors cannot engage in correspondence in this particular contest, and no manuscripts can be returned. From this contest are excluded the employees and their families of WONDER STORIES, as well as the allied magazines published by this company.

6. This contest closes on July 25th, by which time all entries must have been received. Prize winning answers will be printed in the October 1932 issue of WONDER STORIES.

Address all letters to Editor Cover Contest, c/o WONDER STORIES, 98-98 Park Place, New York City.

Castaways of Space

(*Concluded from page* 125)

four electric heaters in the room to prevent the oxygen from clouding as much as possible.

The life-giving air came out of the heating chamber with a rush, permeating the whole cabin, the whole ship, with a thin mist. Suddenly Kraft thought of the menacing asteroid hurtling toward them hundreds of kilometers away. He could see it from the navigation cabin. On the way to the cabin he turned on the air rejuvenator, a complicated mechanism for purifying ninety per cent of the atmosphere. Immediately, it started up with a high-pitched hum.

IN the nose of the ship Kraft looked up anxiously into the heavens. Even before he had entered the cabin from the dark corridor he was conscious of a faint illumination from the ports. And now he saw the cause of the strange light in all its weird glory, looming larger and more menacing than ever, and filling a great portion of the sky. The vast boulder swirled, giving off dull flashes from its innumerable surfaces of black lustre.

As he stood there for an instant, the faint illumination lighted up Kraft's face through his glass port. A startling change seemed to have taken place in his massive ruddy face, a change that would have horrified himself could he have seen it. Deep sunken, cavernous eyes. Emaciated hollows below great knobs of cheek bones. And brown parchment skin drawn tightly across his skull-like forehead. A veritable picture of death.

Kraft turned back quickly, and made for the oxygen cabin. Just as he was entering the chamber, he suddenly sagged to the deck in a violent fit of coughing. Blood, a peculiar red, welled up to his lips. He crawled over to Rogers, and laboriously unscrewed the shackles of his helmet. With a great effort he removed the globe to reveal Rogers' bare head. Already the Captain was reviving in the fresh atmosphere. Kraft left the earphones on him so that they could communicate. The prostrate man opened his eyes.

"Kraft!" he murmured quietly, beginning to move.

"Hurry, sir, or it will be too late!" the swaying Kraft mumbled, as if in a stupor.

Rogers raised himself on his hands, shaking his head and blinking his eyes to clear his senses. Suddenly, as he lifted his eyes, he caught a glimpse of the spaceman's face in the light of the ceiling globe that penetrated through his helmet port.

"Kraft, you *were* burned!" he cried out in a hushed voice vibrant with deep feeling, at the same time hiding as best he could the sickening horror of the skull-like head in the helmet.

The withered head inside shook impatiently.

"That doesn't matter now, captain. Get into the control cabin, and break ground as quick as you can. We're going to crash;" It was an imperative command.

Rogers shook his head again. Crashing asteroids! The inevitable doom from above! They must escape. He was the one escape depended upon. Air—if he could only get enough into his lungs! Everything in the room went swirling off into space again. Kraft's impassioned plea to brace up brought him back. Objects brightened about him. He stood shakily on his feet.

"All right, Kraft."

As he made his way from the room, the captain cast one backward glance. Forever afterward he was to remember that look—the bright glint in the man's eyes as he swayed there on his knees. Then he hurried as best he could into the control cabin, switching on the shaded operating lamps over the electrical firing relay controls of the rocket chambers.

He threw on a heavy current from the Dewar-Hammerlingt cells, and then ran trembling fingers over a row of black studs, tripping the firing relays one after another. A tremor passed through the air, as she woke into life again. The soft hissing of flaming exhausts sounded in the cabin, as the slender ship started forward a few meters above the ground riding on her resilient cushion of repellent gravity. So busy with the operating controls was Rogers that he had missed the significance of a clanging metal door—the familiar clang of the inside door of the air lock. It had opened and closed.

"Goodbye!"

Rogers, fiercely intent on lifting the ship in a great swooping circle to leave the crashing asteroids at right angles, started in breathless astonishment. Kraft's voice! What did it mean? A slight movement on the colorless surface of the planetoid below caught his eye from the side observation port. He had a momentary vision of Kraft's massive bulk outlined in the reflection from his brilliant exhausts, lying on the ground and waving a mailed hand. That was all. Wasting away quickly from the effects of the radium burns, the heroic spaceman had gone out the lock in a supreme effort to save Rogers from the ravages of the horrible disease that wracked his body. Too late to turn back for him.

Barely a safe distance in space, the lone captain watched in white-faced agony the smaller asteroid crash into the larger one in a great soundless flash. For a while he hovered about like a forlorn spirit, reluctant to leave its mortal plane. And then, disconsolately, he headed swiftly for a green pinpoint in the velvet depths of space. Poor Kraft. Never again would he thrust his fingers delightedly into luscious black earth on homecooming, and smell the green things of Nature, or hear the noises of a great city that irritate ordinary stay-on-Earth mortals! Kraft was an eternal castaway of space.

THE END

The Time Conqueror

(*Concluded from page* 147)

he became aware of a sense of impending horror, yet a horror that possessed no concrete form.

Larger, steadily larger, the Brain grew; and it began to send thoughts into the mind of Koz.

"You remember nothing of the past that I said you should try to recall . . . Perhaps I can refresh your memory. Look!"

And suddenly before his staring eyes there opened what seemed to be a vast tunnel of teeming life, wherein flowed the endless, unbounded stream of past events! For a fleeting instant he peered through the tunnel into the past; then his eyes saw only the Brain—but there remained to him the memory of men whose faces and bodies looked very like his own—and who had died horribly.

"They died, Koz, because the Brain is just!" Icily, like a death-knell the thought came to him—and that horror that had been formless began resolving itself into something definite, something concrete.

With a deep, shuddering fascination he stared at the steadily expanding mass of grey matter—stared and stared until it had become a colossal thing, until it was all of three hundred feet in diameter, reaching far beyond him on every side.

Illusion—it must be illusion! But, no; the people of the Clan were seeing it to, for they had turned with one accord and were speeding away from him, striving to get beyond the edge of the gigantic sphere and the dreadful Brain. No illusion—ghastly fact!

A sudden panic seized Koz. He—he too would run! What! He could no longer control his limbs—could not move them! He shrieked a curse; and his staring eyes distended with fear.

LARGER, larger . . . Would the accursed thing never stop growing! Even now it was as large as—as the vision of the Brain that he had seen on the previous night!

And as though that thought had been a signal, there echoed through the mind of Koz a faint whisper of mad laughter; and he heard as from a great distance; "Crazy, crazy Koz!" And with the echoes there came a momentary flood of the previous night's insanity; and Koz threw back his head to return the laughter—but he uttered no sound.

For the Brain—the colossal mass of living nerve cells—was descending upon him, sinking slowly, inexorably toward the Earth! And he was beneath it, in its path! A terrified scream burst from his lips. With upthrust hands he strove to ward off its approach, to keep it from him; but it continued its implacable descent.

"Justice, Koz, justice!" Almost unnoticed, the thought of the Brain reached him.

Moaning, shrieking and cursing, Koz shrank back, cringed; and his lips twitched in madness. He had seen the death of those others like him—and now his end was drawing near! Even now, the Titanic Brain was almost upon him; soon would be crushing out his life! In sudden weakness his limbs gave way, and he sank to the Earth. Ineffectually his fingers clawed the dust.

Suddenly he felt a crushing pressure upon his back. It seemed to be forcing him into the ground. He twisted and writhed in agony; a jumbled stream of words, utterly meaningless, utterly spontaneous, sprang from the fire in his mind.

In a moment the pain became insupportable; a shrill shriek of unutterable agony was wrung from his tight-clamped mouth—something seemed to burst—and he was *within the Brain!*

Within the Brain! Enfolded, completely covered by the slimy, viscous substance of the ghastly thing—it filled his eyes and nostrils—it clung to every inch of his naked body like a blanket of leeches.

Then through the mind of Koz, through his entire being, surged the tide of the Brain's thoughts:

"First Kozsarek, then Clavering, then Vastine, and now Koz—dying every one! Dying horribly, in fear—as John Ovington died—and in payment for the injustice done to John Ovington. Only justice, Koz, the justice of the Brain!" And the dying body of Koz swayed to the waves of mighty laughter that followed.

Koz was dying—dimly he sensed it. The fires of his life were waning. He could not breathe; the substance of the Brain seemed to be contracting, crushing him into himself.

His arms waved jerkily—his body twisted and writhed—his lips parted and he strove to scream—but he could utter no sound. Suddenly his body sagged—his mind was crushed—and his spirit, his life, was forced downward, downward into the black pits of oblivion. The icy hand of death fell upon him—death by the suggestion of the Brain!

And the throngs that had watched the writhing and twisting and struggling of Koz the Demented in the empty space beside the strange, spiked sphere, who had heard him scream, who had seen him die—with one thought they turned and fled in a panic of nameless fear.

And the body of Koz, an unsightly thing of open wounds, with contorted limbs, his face a rigid mask of unearthly horror, lay in a slowly growing pool of blood under the rays of a torrid sun—alone.

* * * *

Across the centuries of time in the laboratory of Dr. Leo Kozsarek lay another body—a body contorted as was that of Koz—a body that in the throes of its mental torture had slid from its chair, had writhed and twisted and struggled on the floor as Koz had writhed and twisted and struggled; had screamed as Koz had screamed—had died as Koz had died! The body of Leo Kozsarek, killed by suggestion of the Brain!

There was silence in the big laboratory, utter silence—silence unbroken save for the faint, insistent, steady throb, throb, throb of the apparatus beneath the brain of Dr. Ovington, the entity that was to live on and on through countless centuries—the Brain that had conquered time.

THE END

Science Questions and Answers

This department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical also, to print answers as soon as we receive questions. However, questions of general interest will receive careful attention.

The Difference Between Electricity and Magnetism

Editor, Science Questions and Answers:

Why is it that while copper is a good conductor of electricity, it is not magnetic and cannot be picked up by a magnet?

Beverly W. Thomas,
Keokuk, Iowa.

(This question propounded by a 12-year old reader is quite fundamental to our knowledge, or lack of knowledge of electricity and magnetism.

Insofar as our present day theories go, electricity and magnetism are complimentary rather than similar effects. For example, in the neighborhood of an electrical conductor, such as a wire, and in a plane at right angles to the flow of current, a magnetic field is set up by the current. Similarly if a wire is moved through a magnetic field a flow of current will be set up in the wire at right angles to the field. Magnetism and electricity each can create the other.

Now a flow of current is assumed to be a flow of electrons (the flow of electrons is in a direction opposite to that considered as the flow of current. In other words electrons flow from the negative to the positive terminal.)

The setting up of magnetism in a body such as a bar of iron is considered to be a rearrangement of the molecules in a definite pattern. There are therefore certain materials such as copper, called conductors, whose electrons can pass along it with little resistance. There are other materials like iron, called magnets) whose molecules can rearrange themselves into definite patterns.

It is a mistake therefore to consider the flow of electricity and the creation of a magnet as identical or even similar effects.—Editor)

The Weight of the Earth

Editor, Science Questions and Answers:

Many times I have heard of the "weight of the earth" mentioned. Is the figure given an estimate, or is there really a way to determine it?

William Palmer,
Kenosha, Wis.

(When we speak of the "weight" of a given object on the earth, we generally mean the attractive force that the earth exerts upon it, as related to the attractive force for a given standard object. Thus we have a standard object whose weight we call one pound. We mean by this that a force of one pound is necessary to sustain its weight at the earth's surface against the earth's attraction. Or we mean that one foot-pound of energy is necessary to lift it one foot against the attraction of the earth.

The weight of every other object therefore is computed from this standard weight. If it takes 180 foot-pounds of energy to lift an object one foot against the earth's attraction we say that it weighs 180 pounds.

Now let us take two one-pound weights and measure the attractive force between them. The two weights will be suspended by long fine wires (assumed as weightless) and will be placed with their centers one foot apart. This attractive force we will call F.

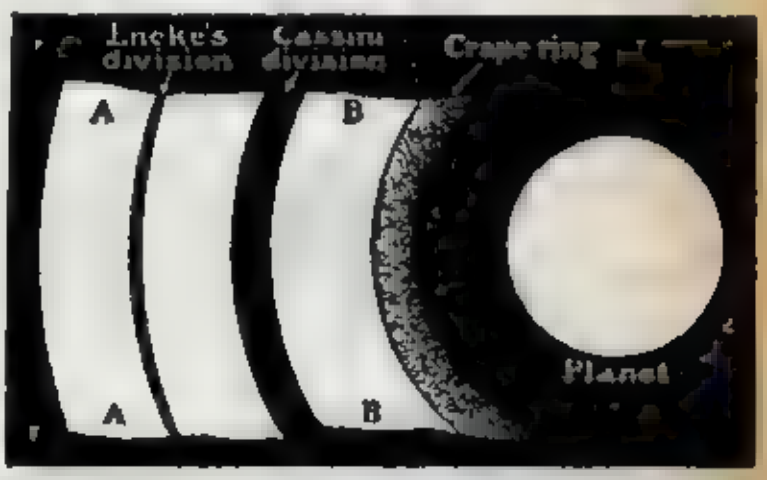
Now if these two weights were 4000 odd miles apart (the distance to the center of the earth) the attractive force between them would be

$F=F/(4000\times5280)^2$ the figure 4000×5280 is the distance to the center of the earth in feet, and this figure is squared because of Newton's law that the attraction between two bodies decreases as the square of the distance between them. F, in other words, represents the attractive force that would exist if two one pound weights were separated by the distance of the radius of the earth, or in other words it would represent gravitational attraction upon a one pound ball by the earth if the earth also weighed one pound.

Now, we know the actual gravitational force upon a one pound weight by the earth whose center of gravity is 4000 miles away. That force is one pound. Therefore to find what must be the weight of the earth in order to exercise a force of one pound upon our standard weight at a distance of 4000 miles we say that W (weight of the earth) = 1/F. F is really a very minute fraction and W the weight of the earth comes to be

13,000,000,000,000,000,000,000 pounds.

In other words, just as we measure the weight of an object on the earth by the attraction of the earth for it, so we weigh the earth by the attraction of the object for the earth.—Editor)



Showing the planet Saturn and its system of rings, divided into four parts. The closeness of the rings to the planet may account for the fact that they consist of small particles of matter only. (From "The Sun, the Stars and the Universe," by William M. Smart. Published by Longman's Green & Co.)

Saturn's Rings

Editor, Science Questions and Answers:

In a scientific book I read that the rings of Saturn were composed of meteorites. Then in another book I read that they were composed of a substance a little more dense than gas. Would you tell me which is correct?

Edward Camille,
Erie, Pa.

(According to modern authorities the rings of Saturn consist of a vast assemblage of discrete particles. The various rings, and there are really four of them, each have their own makeup. For example the inner ring, called the crepe ring, is transparent, and in fact the planet can be seen through the ring. The rings are divided into ring A (see accompanying sketch) which is the outer ring, ring B and the crepe ring. Rings A and B are each separated by divisions in which there is practically no matter.

Each ring consists of a vast multitude of small particles, each particle being an independent satellite of Saturn. This was proved by spectroscopic tests. If for example the rings were uniform masses of material all moving about the planet together, then the outermost particles would have a greater speed of rotation than the innermost, for they are at a greater distance from the center. If, however, each particle were an independent entity, the outermost would move more slowly, according to Keplers laws. (Just as the outermost planets of the sun move about it more slowly than the innermost.)

Observation showed that the outermost particles did indeed move more slowly than the innermost. The conclusion is that although the rings do have gaseous material in them, they consist for the most part of small particles of matter, from the size of a pebble upward.

It is believed by some astronomers that the rings originally consisted of a moon of Saturn which approached the planet so closely that it was broken into pieces by the vast tidal forces set up in it.—Editor)

READERS

If you like "Science Questions and Answers" in this magazine, you will find in our sister magazine, EVERYDAY, SCIENCE AND MECHANICS, a similar department, greatly expanded called "The Oracle." Look for it, you science fans!

Waves or Particles?

Editor, Science Questions and Answers:

Regarding the nature of light, which is favored, the particle theory or the wave theory?

J. S. Hoerl,
San Francisco, Cal.

(One of America's great physicists recently pictured the struggle between the corpuscular (or quantum theory) of light propagated by Isaac Newton, and the wave or undulatory theory put forward by Christian Huygens, as being a football game with the tide of victory swinging first from one side to the other.

Huygen's theory, which has been reinforced by the Schrodinger wave mechanics, which tries to explain the nature of the atom by wave motion, assumes that light is a form of energy that disturbs the ether causing it to transfer energy waves, just as sound disturbs the air. He based his contention upon the possibility of superimposing one wave upon another, a thing that to him seemed impossible were the waves to consist of material particles.

The corpuscular or quantum theory assumes light to be tiny pellets or corpuscles shot out at 186,400 miles a second from their source. Today the quantum theory has been slightly modified, the corpuscular idea and the pellets are considered to be quanta of energy instead as really material particles. It is curious that Newton who first put forward the idea of this

(*Continued on page 190*)

The Reader Speaks

IN this department we shall publish every month your opinions. After all, this is your magazine and it is edited for you. If we fall down on the choice of our stories, or if the editorial board slips up occasionally, it is up to you to voice your opinion. It makes no difference whether your letter is complimentary, critical, or whether it contains a good old-fashioned brick bat. All are equally welcome. All of your letters, as much as space will allow, will be published here for the benefit of all. Due to the large influx of mail, no communications to this department are answered individually unless 25c in stamps to cover time and postage is remitted.

The Intellectual *Hasenpfeffer*

Editor, WONDER STORIES:

Twenty years a silent reader of 1A fiction—and this my first squawk: being an author and one of the few Egyptologists who won't ever goosestep with the 'Rah-Rah' (very new!) boys, you just use your own judgment about what is which, and why.

So far, I've coddled up to Gernsback publications in order to forget myself, and because imagination runs riot among your literary galaxy. Time and again, I swore off, nauseated by the final 'clutch-and-clinch' of daffy heroines, and still balmier heroes. (Yes, I know the dumb public eats it all up, but—IS much necessary, after all?)

Then, at last, I stumbled across Clark Ashton Smith's 'Eternal World'—that broke the ice, believe you me. Here I had about given up hope that the near Immortals of the tabulating fraternity would ever get a bad taste in their mouths from dispensing *trash*, and now C. A. Smith must come along and lift the whole caboodle of misapplied kindergarten crossovers out of the intellectual *hasenpfeffer!*

Shades of my ancestors, how can I thank Mr. Smith for giving us something so darn good that it is almost a shame to throw it over the counter, at *two-bits* per throw! Take it from one whose *medulla oblongata* was shaped in better days (than you and I, and other 'white collars', care under their breath!)—this man Smith can make all the rest of hardworking arbiters to Mercenia look like a U. S. S. R. copeck. If just a few more of his caliber would oblige with something no connoisseur will pass up, why, I'd go without dinner, if necessary—just to buy a magazine decent enough to include such high grade stuff.

Ah, yes, one more thing—there are oodles of birds like me, and the 'Great Neanide' starts rising (catch on!). So, then, give us (who know our onions) another brunk—of "The Eternal World" variety!

Maximal (Aegyptus) Pearman,
Chicago, Ill.

(We hold no brief, Mr. Aegyptus, for the final "clutch and clinch." And we have a naive idea that the great American public is tired of "daffy heroines and still balmier heroes." We have witnessed movie audiences laughing out loud at love scenes that would have had them gripping their chairs ten years ago.

Our policy on love interest is "No love interest unless it belongs in the story." We have pursued that policy returning story after story with the comment, "Eliminate the mush."

Naturally we would be prudes to say that love interest should not be in our stories. For scientific inventions and adventures are just as often a result of some emotional stress (so the psychologists say) as of intellectual *hasenpfeffer.*—*Editor*)

From a Professor of Medicine

Editor, WONDER STORIES:

I read C. W. Speir's story "The Final War" in your WONDER STORIES and am writing to tell you how deeply I was impressed with the vivid account of a future war. The story was obviously conceived by a man who did not want to write fiction but rather express his natural fear, deduced from his experience in the previous war, of what might happen to us in the future. I consider this type of story the most effective weapon against future wars and earnestly believe that your magazine is doing a great service to our younger generation.

I had not been acquainted with the WONDER STORIES before but after I happened to read Mr. Speir's account I read through all the others and expect to continue to do so in the future.

Robert G. Bloch, M.D.
Associate Professor of Medicine,
University of Chicago,
Chicago, Ill.

(This letter hardly needs much comment, for it is in line with the great number of letters received from our readers. Although more cleverly written stories have been published in our magazine, we do not remember any that so deeply stirred our readers. A story must be very moving to cause men to write in to tell us that they were nearly weeping before they finished "The Final War."—*Editor*)

Lost the Degrading Urge

Editor, WONDER STORIES:

There is something fundamentally wrong about these stories of the far distant future in which men are pictured as having lost all their animal markings, hair, teeth, etc.—yet are shown fighting savagely with weapons of atomic power and rays.

When Man reaches that far-distant stage of development, he should or will have lost that degrading urge. Through slow evolution all these animal traits would be forgotten, and with no reason to fight, the characteristics would die out. When has savage fighting ever accomplished anything but destruction, ruin, and retrogression!

Yet our authors seldom fail to introduce such an inconsistent theme, with countless wars of savage brutality and plentiful illustrations of the race's baser side. If this is done to appeal to the type of reader who enjoys such things, then the representative reader of science fiction must in truth be a bloodthirsty person—the type that reads puerile "Wild West" fiction. The constant theme of a too-large majority of published science fiction is war, strife, fight. Oh for a *science* fiction tale once in ages!

In the discussions departments of science fiction magazines I have occasionally seen the hope voiced that the constant dish of rays and rockets be changed to something scientific. I have also heard that the discussions departments were taken up by scientific discussion. Why anything else! They are *supposed* to be science fiction magazines. The type of reader who reads science fiction for the thrill brings in the money for a time, but soon quits reading. The only kind who continue reading science fiction once they have discovered it are those who read all of it for the science they can get from it. A very few read for mere desire of having something different from the usual run of literature. These too in time cease enjoying it, and turn to something else. Altogether, the companies that publish our science fiction profit, but do the readers?

Linus Hagenmiller,
Farmington, Missouri

(If Mr. Hagenmiller studies carefully "Brood of Helios" now appearing in WONDER STORIES, he will discover why it is impossible for man to forget how to fight. Nature is never still, never asleep. And she will not allow any race to forget that life is a constant struggle, of species against species. If we eliminate one natural enemy, another will spring up. So the moon men in "Brood of Helios" who had forgotten how to fight were faced with extermination by a savage ruthless race.—*Editor*)

ON LETTERS

BECAUSE of the large number of letters we receive, we find it physically impossible to print them all in full. May we request our correspondents, therefore, to make their letters as brief and to the point as they can; as this will aid in their selection for publication? Whenever possible, we will print the letter in full, but in some cases, when lack of space prohibits publishing the complete letter, we will give a resume of it in a single paragraph.

A Pebble and a Pyramid

Editor, WONDER STORIES.

Bernard Keaton's puerile paean in praise of P. S. Miller, in your May issue, was the most asinine and sickening effusion I have ever encountered.

To mention Miller as a rival of A. Merritt is like comparing a pebble to a pyramid. And the other authors whom Keaton condemns so unreasonably are all far superior to Miller in every way. In justice to them and to their many admirers, you should give this brief letter the same prominence accorded to Keaton's sycophantic drivel.

Emery Brent,
Bronx, New York.

(It's up to Mr. Keaton now to prove this point, so hotly attacked by our correspondent. Since this dispute belongs to our readers we will remain out of it, and be merely the umpires.—*Editor*)

There Simply Are Not Spirits

Editor, WONDER STORIES:

Have you read Russell and Copperman's "Mind Creative and Dynamic?" If you have not you certainly should do so as it contains material in which thousands of your readers are interested. It seems to me that this book certainly makes an end of spiritistic hypotheses and the mediumistic humbugs who defraud millions of dollars from the American people each year.

The authors of this book clearly explain that each human action in which consciousness or volition plays a part is psychological phenomena. Beyond the ordinary psychological phenomena of human life and action lie other phenomena notably genius and the so-called psychical phenomena, including those called spiritistic.

Russell and Copperman through actual experiments have successfully found the laws that govern these phenomena, and they clearly explain exactly what they mean. They follow this by showing that all these phenomena may be reduced to an exact experimental basis.

Russell and Copperman prove beyond all question that psychology is perfectly capable of annexing all so-called psychical phenomena without exception, and that when this is done a perfect explanation of the nature of genius develops. But this marks the end of spirits and spirit

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THE READER SPEAKS

control. There simply are no spirits, and the phenomena credited to spirit agencies fall into place under the identical law that governs genius in all its phases.

I suggest that you invite your readers to test out all the experimental technique developed by Russell and Copperman and report to you the results.

Samuel Weinbrod,
Bronx, N. Y.

(A review of "Mind—Creative and Dynamic" appears in this issue. We would be glad to hear from any readers who have tested out the experiments that Mr. Weinbrod mentions.—*Editor*)

Jesus Said It First

Editor, WONDER STORIES:

In an editorial comment appended to the letter of Desmond Elwood of Auckland, New Zealand you attribute the quotation "You shall know the truth and the truth will set you free" to one Henry Booth.

I am writing to enquire whether Henry Booth is a nom-de-plume of one St. John who in the fourth Gospel of the Bible says, Chapter 8, verse 32, King James version, "And ye shall know the truth and the truth shall make you free."

And further by glancing back a verse or two we find that the aforesaid St. John was merely quoting one Jesus Christ, a native of Bethlehem in Judea.

There may be some doubt as to whether Christ actually said these words as the synoptic gospels make no note of them. But in any event they were extant, whether from the pen of him whom we call St. John, or another many years before people had patronymics like Booth.

Gridley Buddy,
New York, N. Y.

(David Lasser, who in collaboration with Dr. David H. Keller, wrote "The Time Projector" in which the above quotation appears, is well aware, he says, of its biblical origin. As a matter of fact he deliberately put Christ's words into the mouth of Henry Booth, for Booth was supposed to represent a new Messiah, a modern scientific Messiah, come to save the world from its own folly.

Like Christ, Booth was treated as a dangerous man, and his life was sought because he dared to give people the truth. The story was aimed to demonstrate that even in our present enlightened day, the coming of a Messiah, with infinite power to save the world, would cause only chaos. People are too blind to be saved and if their cooperation in the process of salvation is necessary, then it must end in failure. This is a pessimistic conclusion that the authors of "The Time Projector" arrived at; and one that might be debated hotly.—*Editor*)

Learning to Walk

Editor, WONDER STORIES

In my humble opinion Mr. Schwartz is both right and wrong. The majority of science fiction now being published is little better than wild west stories. The one redeeming feature is that nearly all of the stories present some new idea. The majority of the authors either cannot or will not produce anything else but exciting, sensational tales with a literary value of ten cents a dozen. It is such as these that are devoured by wide-mouthed not wide-awake youths. They care little or nothing about the science, and are not appreciative of what good there is in these stories.

As a hopeful writer I can sympathize with Mr. Schwartz's conviction. However, he has overlooked several points.

Science fiction is a new thing. It is totally unlike anything that has gone before. Long ago a peculiar acorn was found. In 1926 it was planted by Hugo Gernsback and now it is sprouting, bearing first leaves. That acorn, science fiction will continue to grow until it is a mighty oak, admired and respected by all.

One cannot expect a seed that has just come up to bear perfect fruit. One does expect, however, that the sapling will expand and develop. You have been constantly growing and improving. It is a slow process but you are definitely better than you were in 1929.

Now, however, is a critical time. To use another analogy, you are learning to walk; you

(*Continued on page 186*)

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Limitation of offspring
The sexual embrace
Warning to young men
Secrets of greater delight
Dangerous diseases
Secrets of sex attraction
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Anatomy and physiology
The reproductive organs
What every woman wants
Education of the family
Sex health and prevention

Girls—Don't Marry

before you know all this—

The dangers of petting
How to be a wife
How to manage the honeymoon
What liberties to allow a lover
Secrets of the wedding night
Beauty diets and baths
Do you know—
How to attract desirable men
How to manage men
How to know if he loves you
How to acquire healthy stout and beauty
How to beautify face, hands, hair, teeth and feet
How to acquire charm
How to dress attractively
Intimate personal hygiene
How to pick a husband

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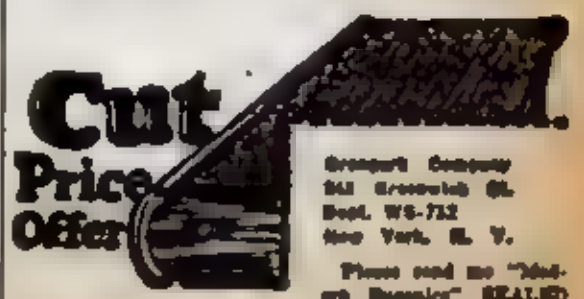

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THE READER SPEAKS

(Continued from page 185)

must be taught where to walk. At the present time science fiction is not known for its literary value. Its true purpose is very little understood. Authors are writing dime novels and are labelling them science fiction. You are not immune from these fellows.

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R. W. Lowndes,
Darien, Conn.

(Mr. Lowndes opens a new field of speculation for our readers. He poses the question of what science fiction should really be and do.

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Editor, WONDER STORIES:

Congratulations on "The Time Stream", both to John Taine for writing it and to you for printing it. It is far above the usual standard of your authors, and is exceedingly well worked out, as is usually the case with Mr. Taine's stories. It is a pleasant relief to read it after some of the stuff you have printed, in spite of the fact that it leaves all of the difficulties and inconsistencies so inherent in all time stories.

I notice that comments are still being aimed at Don Lemna's work, "The Scarlet Planet".

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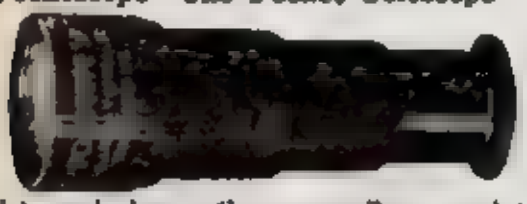

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THE READER SPEAKS

and that the author has been psychoanalysed using the story as the basis for the deductions. This is regardless of the possibility that this particular author planned the story to bring out these characteristics in the subjects. It may be that Mr. Filmer merely psychoanalysed the characters instead of the author.

I wonder if the authors of "Exiles of the Moon" ever heard of caisson disease, or the bends, suffered by divers, as a result of too rapid decompression! It seems that rapid reduction of the pressure causes bubbles of nitrogen to form in the blood, the solubility of the gas being a function of the pressure, the reduction of pressure leaving the blood supersaturated with nitrogen. These bubbles are said to plug up the capillaries and play hell generally. In the brain it would mean death.

Granting that according to the radiation laws, the loss in free space over a short time would be negligible, I still entertain grave doubts about stepping into space without a well-tailored space suit. Instantaneous reduction of pressure from 700 or 750 mm. of Mercury to zero should have a very unhealthy effect upon the system—the authors' statement to the contrary notwithstanding.

Here I break down and ask leave to vent my feelings on something that has always irritated me. What is there so fascinating about a retort? In nine-tenths of the descriptions given by authors, the contents of the story book laboratory, seem to run almost entirely to retorts, test tubes and bottles of red, yellow and blue solutions. Fortunately today, retorts are more or less of a curiosity and belong to history. I say fortunately, for they are unbelievably inconvenient, if picturesque. If I remember correctly it was Hari Vincent who went everyone one better and filled a laboratory with alembics. Now Vincent may be a good engineer, but I defy him to show me an alembic anywhere outside of a museum or a book on sixteenth century chemistry. Some day I hope to read a real description of a chemical laboratory one that imparts some of the spirit of the place, instead of being a mere enumeration of apparatus, ancient or modern.

I have no objection to F. Schuyler Miller's creations of silicon. But when Miller tries to bring it down to facts, it is another story. He names many silicon compounds of organic nature, and I would cite a list of others from Gmelin, Beilstein and Heimann. But how many silicon compounds can he name which contain no carbon or little carbon, and which could carry out the work of building a living organism, analogous to our carbon organisms? Not one. The carbon-carbon linkage is apparently unique in its stability, as is exemplified by the great number of organic compounds known.

It would be safe to say that there are a hundred times as many organic compounds known as inorganic. On the other hand the silicon-silicon linkage is very unstable and tends to go to the Si—O—Si grouping by the entrance of oxygen between the silicons. Practically all elements will form aliphatic or aromatic compounds of semi-organic nature—but why go on? But compounds analogous to organic compounds, containing great numbers of like atoms, joined to each other, are very unstable, if they exist at all. This is experimental fact.

It may be argued that conditions here favor the formation of these carbon compounds, and that silicon life might develop under vastly different chemical and physical conditions, say with hydrogen fluoride replacing water and fluorine the oxygen of the air. In any case it seems more interesting to me to speculate upon the substitution of nitrogen for oxygen, ammonia for water and develop an ammono system, instead of substituting silicon for carbon. But above all let fancy have full sway. More power to you, Mr. Miller.

Robert D. Swisher,
Ann Arbor, Mich.

(In this potpourri of advice and comment we perceive sage wisdom. Perhaps Mr. Miller will reply if only to defend his system of carbon compounds and to comment on the ingenious idea of Mr. Swisher for a world of ammonia or hydrogen fluoride baths.—*Editor*)

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THE READER SPEAKS
(Continued from page 187)

These All-Powerful Rays

Editor, WONDER STORIES:

I first began to read WONDER STORIES several years ago. At that time the stories were pretty soundly scientific and I noticed that a slip on the writer's part was quickly and intelligently criticised in the readers' column. Being an engineer, I admired the technical correctness of most of your stuff, especially stories dealing with pioneer ventures into space. You spoke the language of reality then.

I suppose there is much competition in the science fiction field. At any rate the writers seem to literally vie with one another in the conception of monstrosities. Most of them have far exceeded the bounds of scientific explanation and some have exceeded the bounds of reason. I cite the "Onslaught From Rigel" in which living humans evolve into jointed metal machines requiring oil and an electric charge to run; but retaining their own mentality.

The most abused instrument in the realm of science fiction is the "ray." The introduction of these all-powerful rays into a story kills the interest immediately, for it excludes the possibility of any really interesting situations. Whether it be the "sleep producing ray," the terrible "disintegrating ray," the "magnetic ray," the "paralysing ray," these purely imaginary forces present easy solutions to any and every problem. And the resulting galaxy of monstrous events would put to shame a madman's dream.

I notice that few technical points are discussed any more in the reader's columns. It is very uninteresting to read some layman's list of stories he liked or did not like. Please, Mr. Editor, give us something to stand on. There is a fine but definite line beyond which science fiction cannot go without becoming fairy tales. This rapid evolution of soundly based science stories into weird, confused, extravagant nightmares makes me feel as though I were losing a friend.

"The Martian" by Glasser and Hilliard is one of the finest and most cleverly presented short stories I have ever read.

George W. Race,
Albany, New York.

(We confess that we have been carrying on a campaign against these very things that Mr. Race so soundly complains of. The difficulty has been that a new element entered the field of science fiction, magazines of "wild west fiction" in which science was of little or no consequence. This threw many good writers off their balance and destroyed in some their ability to create a good story without the use of rays, and rays and rays.

We still hope to convince authors that the use of a ray does not take the place of a scientific idea. And while this work is being carried on we ask Mr. Race to be patient. Science fiction is going through a state of evolution. We know it will emerge strengthened considerably. —*Editor*)

God's Own Country?

Editor, WONDER STORIES:

With reference to the remarkable magazine which has during the past year been introduced into my reading list by a personal friend, to wit WONDER STORIES!

May I offer you my sincere thanks as well as congratulations, in that some sections of the broad public throughout the world are awakened to the great possibilities which are today foreshadowed in the fields of science. The result is that the demand for scientific literature increases from day to day, giving us such good rattling yarns as one invariably finds published in your monthly and quarterly magazines.

There is no doubt great room for criticism and query in the foundation and development of some of the stories published, but I do not feel inclined to go into that matter in the present letter. I feel I ought to say that I do dislike the ideas which prompt some of our writers, when giving us tales of space and the boundless worlds which must be therein, to imagine that any race or races inhabiting the said worlds, should be so much more of a phantasmagoria than a race of kindred human beings.

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THE READER SPEAKS

After all there is a great deal dependent upon the imagination of the person writing the story, but do you not think that it is not only an insult to science but also an insult to Nature who endowed us with our brains and appearances, to suggest that life on other worlds should be so grotesque and fantastic, so far removed from what I may call our plane of reasonableness, as some writers vividly imagine!

For instance in a recent publication of another American periodical, I forget for the moment the title, but the story rendered under the title of "The Menace from Mars" pictures the beings of that planet as being green-skinned, crocodile-headed, phantasies, and yet endowed with brains and scientific knowledge far in advance of our own.

May I point out that the letter published in your January number from our mutual friend Dr. W. A. Gibson—Bathgate, Scotland, drawing attention to the octopi story is quite wrong! The magazine he refers to is not a WONDER STORIES publication but is another science fiction periodical with nothing like the quality of stories which appear in your own publication.

To close this letter, may I press an appeal for more stories of the type "Derelicts of Ganymede" or a three-part novel on somewhat similar lines giving us some further insight in to scientific development on interstellar lines, and vary the nationalities of your principals in the stories rather more. It rather grates on one's nerves to find that all stories have principals more or less American that all terrestrial scenes should be cast in U. S. A. (God's own country!)

Stories of the calibre printed by you, should do much to bring together the nations of the Earth into a more united body when the development of science calls. But not if America is going to claim all the credit to the stories. This only causes international jealousy to creep in, and the fundamental moral which is suspected by the writer to run behind the lines of your tales, i.e. scientific education for the good of the whole world, comes to naught.

Here is the outline for what I consider would make a good story. Picture to yourself the rising menace of the yellow peril. Date—around about the year 1975. The drilling and massing of countless millions of yellow troops with the latest weapons that science can bestow. Wars war! Sweeping across the world they carry all before them, with seige and destruction of principal cities of Europe and America. Follows Earth tremors, shifting the bed of the Atlantic. The lost continent Atlantis comes to light. The refugees of the white races take sanctuary there; discovery of gravitational-resistant metal; a voyage to Mars—develop a visitation there, the appeal to the Martians by the white races council, the guarantee of aid from the Martians to reconquer the world provided a reservation is granted for the inhabitants of dying Mars to continue their racial existence. The journey to the Moon, and the massing of reprisal troops there—the flower of the Martian race and the white refugees; the final struggle for world-mastery, and the final defeat of the yellow races, and their exile to some other planetary body. Give this to one of your writers to play with, and see what story he can make of it, preferably a three-part novel.

V. L. Barrett,
Low Fell,
Durham Co., England.

(Mr. Barrett will find that in "The Message from Mars" in the June issue, men of England are the heroes and save the earth; the Americans being on the whole quite stupid and ineffective. In the July issue, Germans appear to be the heroes in Otfrid von Hanstein's "In the Year 2000."

We plan in the near future to run a story written by a Frenchman and dealing with events occurring in France.

We naturally welcome stories from and about all nations; and we believe with our correspondent that international goodwill can be best established by favoring no nation. For that reason we even hesitate to run stories of yellow peril. For while many consider Japan to be a menace to world peace, certainly China is not.—*Editor*)

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WHAT IS YOUR SCIENCE KNOWLEDGE?

Test Yourself by this Questionnaire

1. Where is the orbit of the asteroids? (Page 119)
2. Why are they probably uninhabited? (Page 119)
3. How is the presence of radium ores detected? (Page 124)
4. Name some of the 20th century men who have given us our new physics? (Page 169)
5. What would be the effect of having atomic nuclei swallow their free electrons? (Page 169)
6. Where is the Hooker 100-inch telescope located? (Page 169)
7. Upon what element is protoplasm based? (Page 173)
8. What are the four dimensions of the mathematicians? (Page 129)
9. What is the general conception of how our solar system was formed? (Page 132)
10. What was the process by which the geological features of the earth were formed? (Page 132)

SCIENCE QUESTIONS AND ANSWERS

(*Continued from page 188*)

other (upon which the wave theory of light is based) should have explained light on the corpuscular basis.

At the end of the eighteenth century the corpuscular idea had triumphed due to Newton's authority. But beginning in the nineteenth century a series of attacks upon it by brilliant physicists turned the battle against Newton.

Fresnel, one of the more brilliant proponents of the wave theory, proved his points by the action of light diffracted through a hole and caught upon a photographic plate, the resulting diffraction rings being in accordance with his theoretical calculations upon a wave theory. The Einstein theory seems also to have put a temporary stamp of approval upon the wave theory, for if light were a series of corpuscles shot from a radiant body, it would be hard to imagine that the speed of light could never be greater than 186,000 miles a second. For if the radiant body were in motion, say at 10,000 miles a second and threw off these corpuscles at 186,000 miles a second then the total velocity of the light particles would be 196,000 miles a second (with reference to the same body to which the velocity of the emitting body is referred.)

Sir James Jeans puts it this way. "We hardly know whether there is any actual wave motion in light or not, but we know that light as well as other types of radiation, are propagated in such a form that they have some of the properties of a succession of waves."

Now, of late, the battle has been confused again by the introduction of new concepts of matter. The photon has been put forward as a kind of particle which transmits electromagnetic energy such as light. The neutron, which possesses neither a negative nor a positive charge has also been assumed as a possible type of particle to explain the nature of light.

So although the wave- exponents have the better of it at present, the corpuscular forces have girded themselves with new ammunition and are assaulting the wave fortresses.—Editor)

BOOK REVIEWS

THE DEVIL'S HIGHWAY by Harold Bell Wright and John Lebar, 330 pages, stiff cloth covers, size 4¾ x 7¼. Published by D. Appleton & Co., New York. Price $2.00.

Harold Bell Wright, who is one of America's most prolific and successful novelists has turned his talents to science fiction in this book. Together with his son, who writes under the name of John Lebar, he has constructed one of his typical morality themes. The story concerns a young scientist Frederick Ramsey who becomes associated with a monster scientific genius named Munsker. Munsker has discovered a force called ethericity, which emanates from the mind and can do a multifold of wondrous things. But it seems that all of Munsker's power and his

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BOOK REVIEWS

determination to destroy the world through athericity cannot combat the pure love that a girl Alma has for Ramsey. So, as they say in the old melodramas, "Munaker's fiendish plans came to naught, and at the end love triumphed."

If it were not for the mawkish sentimentality, and endless moralising of this book it might have been an interesting piece of work. But as it is the story moves sluggishly through pages and pages of pointless conversation, and unconvincing love scenes.

The authors apparently have an adequate background of science for their task, but their story as well as their characters remain to the end unconvincing.

MIND—CREATIVE AND DYNAMIC by Charles W. Russell and Gertrude Copperman. 312 pages, stiff cloth covers. Size 5⅝ x 8¼. Published by the Authors International Publishing Co., New York. $3.00.

Under the above imposing title this work attempts, as its flyleaf states, to develop "one of the most significant of the thought structures of the day . . . the psychology of human action and response . . . a provisional solution of man's real place in nature . . . an explanation of the nature of mind and personality . . . the psychological significance of Einstein's Relativity . . ." and a number of other related subjects.

The book attempts to prove these underlying facts of the universe by a long series of analogies, loosely strewn throughout the book. There is little of close, deep or intuitional insight here, rather one gets the feeling that the authors convinced of the justice of their case have made an excursion into literature to find substance for it.

A number of such "universally minded books" are now on the market, written by those who believe that at one fell swoop they have solved the riddle of existence. They seem to the present reviewer to be all of one cloth, and it may be conjectured whether such writers might not make a more important contribution to knowledge by confining their talents to a more limited segment of the universe.

HOW TO UNDERSTAND CHEMISTRY by A. Frederick Collins, 320 pages, stiff cloth covers. Size 5 x 7¾. Published by D. Appleton & Co., New York. Price $2.00.

Mr. Collins adds a new book to his long series of opuses on practical science. The present book is intended to supplement his "Experimental Chemistry" by going into the fundamentals of chemistry a little more deeply.

Mr. Collins starts from the very beginning, and builds up gradually, and in a way that the totally uninitiated will understand, the structure of chemical relation. The chapters cover such subjects as "The States and Properties of Matter", "How Matter is Measured", "What the Elements Are", "What Formulas Are and Why." The author develops his subject in a way calculated to interest the newcomer in the making of simple chemical experiments.

For those who have no knowledge of chemistry, but feel a desire to understand what it is all about, the present book can be recommended.

INTRODUCTION TO MODERN PHYSICS by F. K. Richtmyer, 596 pages, illustrated. Size 5¾ x 9. Published by Mc Graw Hill Book Co., New York. Price $5.00.

This book is not subject matter for the amateur in physics. It is a solid study of the history and development of our physical knowledge followed by a discussion, partly mathematical of present day physical theories. The author is Professor of Physics at Cornell University, and offers this book as a summary of a series of lectures to physics students. The historical chapters dealing with the men and their work who gave us our scientific knowledge of today, is especially interesting, and could be read with profit by any one, irrespective of his previous educational background.

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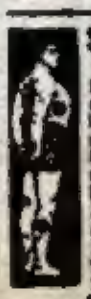

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